Portable

User Guide

Version 8.0

Mobile mapping for your Windows PC, Laptop or Tablet

GLOBAL GBM
Enterprise Mobility

www.globalGBM.com

GBM Portable V8.0 – User Guide

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Global GBM – December 2013

1 Overview

1.1 About GBM Portable

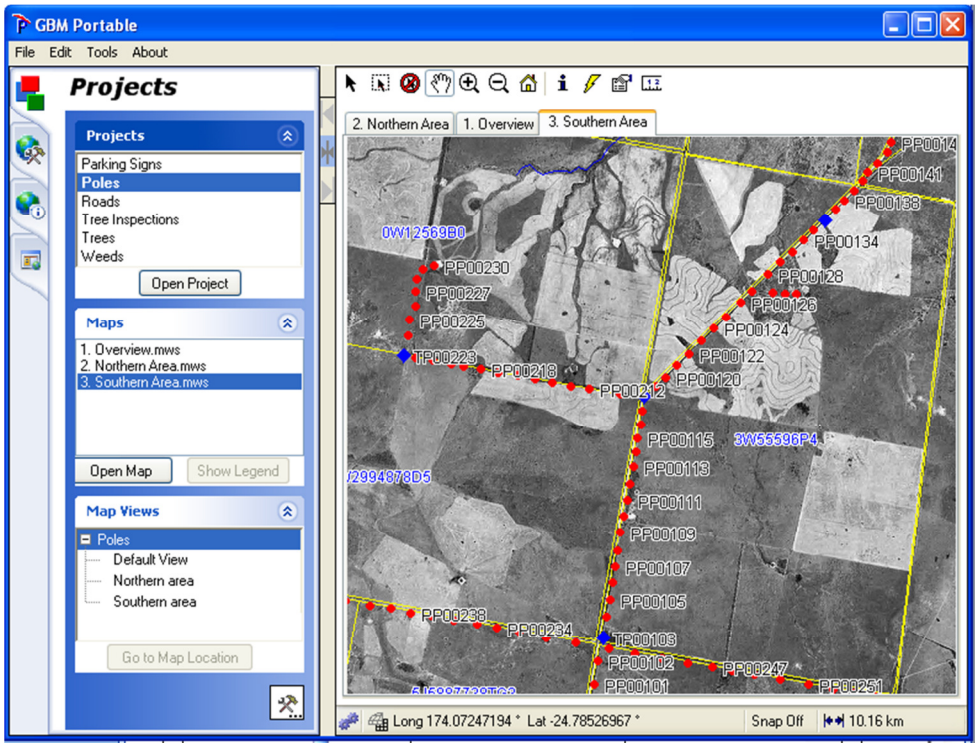
GBM Portable is a member of the Global GBM suite of software products.

This is an integrated mapping solution that links maps and data. It is a very effective map enabled data collection platform for customers operating on Windows devices.

The standard GBM Portable edition focuses on map display and search/edit of data attributes linked to GIS features. Systems extensions and customised business solutions are available that present grids of data and extend GBM Portable with specialist business rules.

GBM Portable shares GBM Custom Forms with its sister products GBM Mobile (for Windows Mobile devices), GBM Pro (for operation inside the MapInfo Professional GPS) and GBM Web (for thin client delivery through Web Browsers).

GBM Portable works on Windows desktops, laptops and tablets. It recognizes Cameras and GPS devices integrated with those systems.



GBM Portable is easily tailored on-site to suite individual project needs.

This can include customisation of the map library, data entry forms (with in-build validation), information displays, data search, map sheets and co-ordinate system options.

Project set-up is normally managed by a local data administrator using configuration tools packaged with the software. No programming skills are required.

This document describes the standard edition of GBM Portable. Extended editions are customised from the base system by the Global GBM development team. Those editions commonly include direct database connections, data listing displays, custom reporting and business rules integration.

Refer to documentation provided by the implementation team for information on those additional features.

1.2 Systems Requirements

GBM Portable works on Windows XP, Windows 7 and Windows 8 Pro devices including desktops, laptops and tablets. It recognizes Cameras and GPS devices integrated with those systems.

This release has been developed in Microsoft .NET and is powered by MapInfo MapXtreme .NET. MapInfo MapXtreme licensing is normally bundled with the GBM system.

Spatial data is normally sourced from MapInfo .tab files, either standard files or linked database tables. It is also possible to open ESRI .shp files.

GBM Portable accepts location input from any GPS units that deliver locations the industry standard NMEA format. Locations are assumed to be described in the WGS84 map projection that is native to the GPS constellation.

2 Installation and Set-up

Installation is via the *Install Software* link on the install CD. The installation media includes separate installers for the main GBM Portable system as well as for GBM Mobile Manager (forms editor) and the GBM Mobile Merge (data integration for MapInfo Professional) sub-systems.

2.1 Installation

Double click Setup.exe to start the installer shell. Then choose Install Software from the main menu. You will need administrator rights to install software. Click each of the installer links in turn and follow the prompts.

2.1.1 GBM Portable

Click the link to install the GBM Portable program onto your Widows PC. The same installer may be used to load a normally licensed copy of GBM Portable, or if you do not have a GBM Portable license key, you can install the software under a 30 day evaluation license. The main GBM Portable installer also loads the demonstration data.

There are three installation options, Typical, Custom and Complete.

Select the ***Complete*** option to get access to configuration tools such as the MapInfo MapXtreme Workspace Manager and the GBM Administration Console. When installed, these administration options are listed on the Tools menu on the main GBM Portable menu bar.

Select ***Typical*** to install only the core mapping software without the set-up and configuration tools. This option is appropriate for regular users who will not be involved in software configuration or project set-up.

2.1.2 GBM Forms Editor

The *GBM Forms Editor* link on the installation CD installs the GBM Forms Editor. Use this module to define custom forms that control the graphical style that is used to draw new map objects and manage the editing of GIS attributes.

GBM Forms Editor need only be installed by data administrators who set up the GBM Mobile style Custom Forms that will be operated by the wider user base. GBM Forms Editor is not normally installed on all end-user computers.

The GBM Forms Editor is shared with other Global GBM products including GBM Mobile, GBM Pro and GBM Web. Forms definitions are imported into GBM Portable through the Manage Forms… option on the GBM Portable menu. Administrators

should user the “complete” install option to make this and other project set-up tools available on the GBM Portable menu.

Administrators who intend to edit forms should always install the forms manger that came with the GBM Portable, even if an earlier edition of the Forms Manager has been installed with GBM Mobile.

Once installed, the forms editor and forms import tools are available from the GBM Portable menu. The menu item will only be activated once a GBM Portable project has been opened. Form definitions are compatible between the two products but some interface components need to be kept up to data to allow import of forms into GBM Portable.

Refer to the GBM Mobile user documentation for instructions on editing custom forms. Refer to documentation below for information on importing forms into GBM Portable.

2.1.3 GBM Mobile Merge

This module operates within MapInfo Professional and is used to merge data that has been concurrently edited on more portable devices, with the master data set.

Refer to the GBM Mobile user documentation for more information about GBM Mobile Merge. GBM Portable users need to invoke the manual processing sequence described in that document.

2.2 Project set-up

GBM Portable works with a project structure. Projects contain map definitions and configuration settings that control the GBM Portable operation. They are defined as set of files in a project sub-folder.

The location of the current Project Directory can be set through an option on the Tools menu. Each sub-folder in that directory is considered to be a separate GBM Portable project. GBM Portable implementations are customized through set-up files that reside in the current project sub-folder or in the installation folder.

(The installation folder is where the file GBMPortable.exe is stored and it is normally C:\Program Files\Geobasemap\GbmPortable.) Configuration settings in set-up files in the project sub-folders always take precedence over the equivalent files in the installation folder.

To create a new GBM Portable project, create a new sub-folder in the project directory and copy the map definition (.mws files) into that sub-folder. You may copy other GBM Portable configuration files into that sub-folder or create them in place through the administration tools packaged with GBM Portable.

Additional information on managing project folders and the set-up files in those folders is provided below. Section 1.5.2 provides instruction on setting the project directory.

There are three main groups of configurations that mange GBM Portable behaviour.

2.2.1 Custom Forms

Custom forms are configured through the GBM Custom Forms editor and need to be imported into the current project through the Tools/Custom Forms Settings… option on the GBM Portable menu.

Refer to Appendix IV for more information on managing custom forms and importing forms into the current GBM Portable project. Refer to the GBM Mobile user manual for more information on defining custom forms.

2.2.2 Configuration files

These files that control some map presentation, search and data interrogation options (Find, Info, Projections and Map Views).

These tools are configured through the GBM Administration Console that will be available on the Tools menu if it has been installed. See section 1.3.1 for information on installation options.

Customers with a centralist approach to data administration often choose to pre-prepare the set-up files and separately distribute them to end-user machines rather that make the GBM Administration Console available to all users.

2.2.3 Map Definitions

GBM Portable works with maps that are defined in MapXtreme Workspace (.mws) format.

MapXtreme Workspaces can be built through the Save As function in MapInfo Professional. A more reliable method is to use the MapXtreme Workspace Manager that is available from the GBM Portable tools menu. The Workspace Manger is only loaded onto the local PC when the operator chooses the “complete” option at install time.

Refer to Appendix III for information on standard configuration options.

Additional customization is possible through other configuration files in the installation folder and in some cases the project sub-folder. These files are used by the programming team to customize GBM Portable to deliver specialist business solutions. They should not be modified by end-users.

One very important file is GBM_UI.xml, as it controls which elements of the user interface are available to GBM Portable operators. It is normally used by the programming team to manage customer specific plug-in modules.

Customers who have commissioned a customized version of GBM Portable and need to distribute different editions to different user groups will need to ensure the correct GBM_UI.xml file (provided to them by the Global GBM programming team) is installed into the relevant project sub-folders.

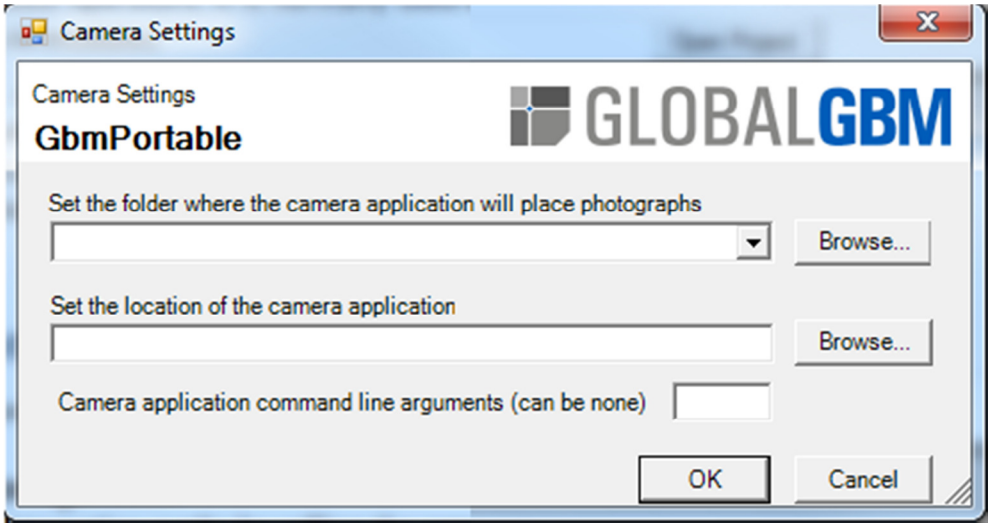
2.3 Local Configuration

Additional configurations are required to allow GBM Portable to connect to peripheral devices.

2.3.1 Cameras Configuration

GBM Portable camera integration works by calling the camera driver provided by the PC vendor and collecting the image captured by that device. GBM Portable needs to know where to find the capture program and where that program stores the images.

Open the camera set-up screen from the Tools/Camera Settings… menu.



Browse to find the program that runs the camera and browse to find the location where that program stores the images it captures.. Some capture programs require additional configurations to be added to the command line when GBM Portable invokes the capture program. Add these arguments to the screen if they are required.

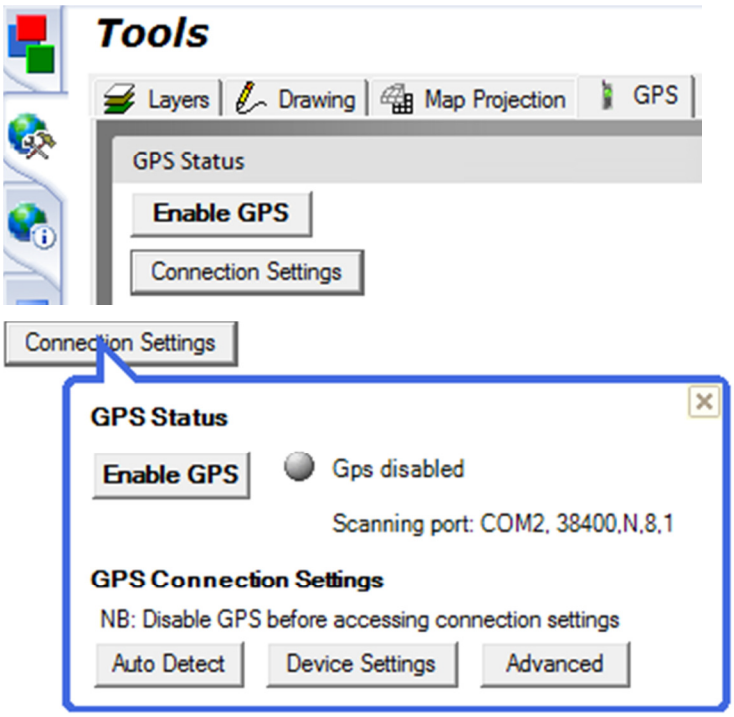
Details vary between PC vendors. Refer to documentation provided by the manufacturer of your computer for details.

These settings are only required when using GBM Custom Forms that require capture of images. Refer to Custom Forms section of the GBM Mobile user manual for details.

2.3.2 GPS Configuration

GBM Portable expects to read GPS locations through a communications port. The set-up program will search the available ports to detect GPS input.

Access the GPS set-up wizard through the GPS tab on the Tools menu.



Click the connection Settings button, and if necessary disable the GPS to allow access to the three configuration buttons at the bottom of the screen.

Auto Detect Auto Detect will search each of the communications ports on your machine and choose the first port that presents NMEA format GPS data. In most cases, this will option will auto-configure communications with the GPS device.

Device Settings The device settings option allows users to select a specific communications port and data settings. Use this option where it is necessary to discriminate between multiple GPS devices that may be available to the computer, for example to choose an external device in preference to a GPS unit integrated into the computer hardware.

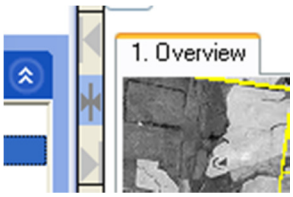
The external unit will need to be separately configured to deliver NMEA data in WGS84 projection. Refer to documentation supplied with the vendor of your external GPS device for information on configuring the GPS unit and establishing communications parameters.

Advanced On screen text describes operation of advanced settings. Only select the static navigation option when the GPS is driven by a hardware chip manufactured by SiRF. Choosing this option with chips from other manufactures (e.g. QUALCOM) may cause the GPS to lock up. Should that happen, it may be necessary to power down the device, or in works case, remove the battery, to force a reset of the GPS hardware.

The Advanced screen also allows activation of GPS logging. Use this screen to assist trouble shooting of GPS connection issues.

3 Systems Operation

GBM Portable presents a two panel display with operating controls in the left hand panel and map displays on right panel



The divider between the left and right panels can be dragged to any position by holding down the left hand mouse button. Click controls on the divider between the panels move the divider to pre-defined positions.

GBM Portable supports four main operating modes. These are selected from the vertical tab strip on the left hand side of the main screen.

Project Mode – Select projects, maps and map views

Tools Mode – Work with map layers, draw GIS features, set map projections and manage GPS units

Info Mode – Info, Find, Locate and Statistics

Custom Forms Mode – Draw map features and edit attributes under custom forms validation

Additional modes (tabs) may be available in some custom implementations.

Tool buttons on the top of the map vary depending on the operating mode selected and work in partnership with controls on the left hand panels.

Additional controls and information displays are provided on the status bar at the bottom of the map panel.

3.1 Projects Mode

GBM Portable projects are sets of maps and configuration files optimized for working with the GIS tables that make up those maps.

3.1.1 Overview

The current project folder is set through the *Tools/Set Projects Folder…* menu item. Each sub-folder in the projects folder describes a specific project and normally contains a set of map definition files (MapInfo .gst geoset files or .wms workspace files) and corresponding configuration files.

The Projects panel allows users to open a map and work with the data in the map layers that make up that map though tools that have been customized for that specific data set.

The following configuration files should reside in each project sub-folder. If any files are missing, they will be substituted for by the default files of the same name in the gbm.config sub-folder of the GBM Portable program files installation folder.

3.1.1.1 Mapping tools configuration files

Find.xml, Info.xml, locate_projections.xml.

See the section on operating GBM Portable in *Info* and *Tools* mode for more information. These configuration files are set-up through the GBM Administration Console as described in Appendix III.

3.1.1.2 Map definition files

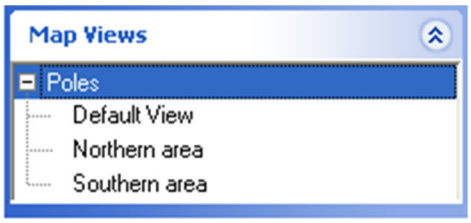
As with MapInfo Professional, maps are composed as an ordered set of map layers. These may be defined as MapX geosets (.gst files) or new format MapInfo Workspaces (.mws files).

MapInfo Workspace (.mws) files may be adjusted using MapInfo Professional V9 or later, or through the MapXtreme Workspace Manger. If selected as an installation option, the Workspace Manager can be accessed from the GBM Portable *Tools/MapXtreme Workspace Manager* menu. The Workspace Manager provides all the features of the MapInfo Layer Control but works natively with .mws files.

The GBM Portable *File/Save Map As…* option will save the current map settings as a MapInfo .mws file.

3.1.1.3 Map View file

map_locations.xml



This file describes geographical areas or map sheets. It is edited through the GBM Administration Console.

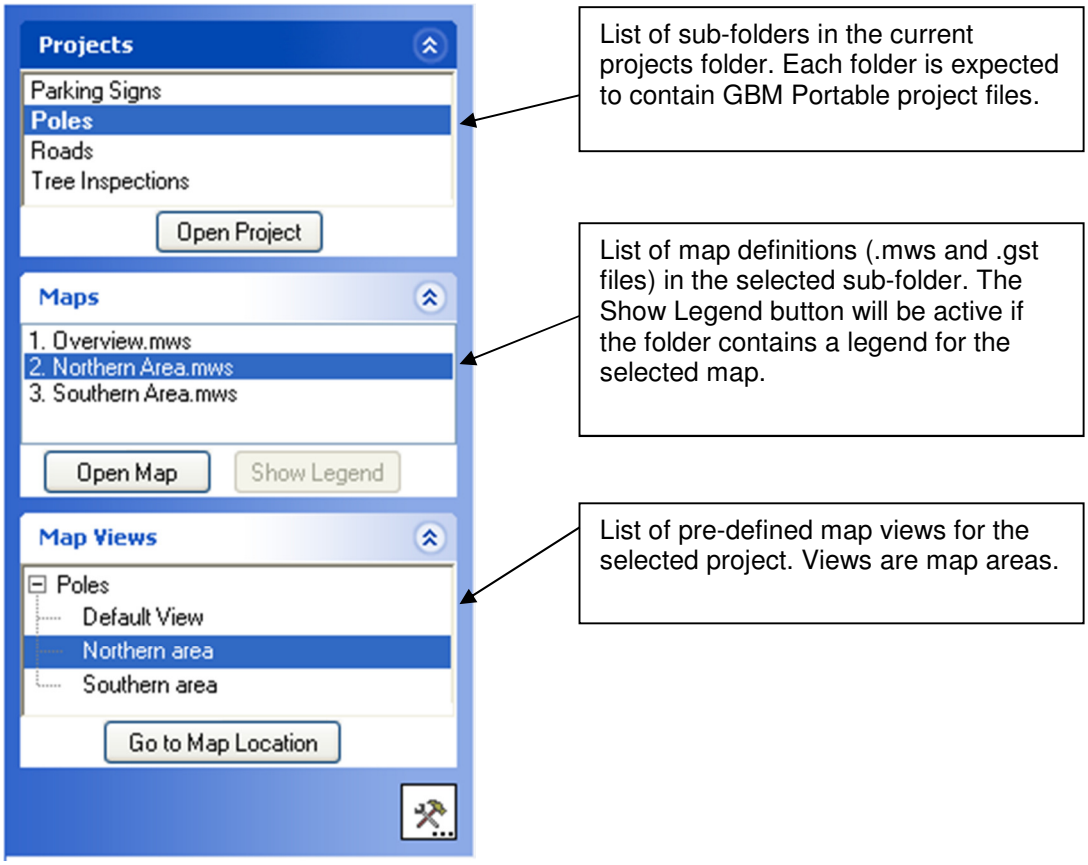
3.1.1.4 Custom Forms definition files

These XML files are located in the *Forms* sub-folder and under no circumstances should they be hand-edited.

They describe how the *Draw* and *Attribute Edit* features work in Custom Forms mode. Custom forms are defined using GBM Mobile Manager. See the section on *Working with Custom Forms* below.

3.1.2 Working with Projects

Set the project folder through the *Tools/Set Projects Folder…* menu item or through the Project *Settings…* button on the main project mode screen. Sub-folders in that location will be listed in the Projects panel.


Projects
Parking Signs
Poles
Roads
Tree Inspections
Open Project
Maps
1. Overview.mws
2. Northern Area.mws
3. Southern Area.mws
Open Map
Show Legend
Map Views
Poles
Default View
Northern area
Southern area
Go to Map Location
List of sub-folders in the current projects folder. Each folder is expected to contain GBM Portable project files.
List of map definitions (.mws and .gst files) in the selected sub-folder. The Show Legend button will be active if the folder contains a legend for the selected map.
List of pre-defined map views for the selected project. Views are map areas.

Select one of the projects by clicking on it with the left mouse button to show the list of maps that have been pre-prepared for that project. This is the list of geoset (.gst) and new format MapInfo workspaces (.mws) files in the selected sub-folder.

Select a map from the list and click the *Open Map* button. The Tools and Custom Forms will be automatically configured for the active project, as per instructions in the .xml files in the project sub-folder.

Optionally select a map view from the bottom panel and click the *Go to Map Location* button to zoom and pan the map to the pre-defined geographical area.

Additional information about the folder locations and active configuration files is available through the *Project Settings…* button.

To create a new GBM Portable project, create a new sub-folder in the master directory and either copy the required configuration files into that sub-folder or create them through the GBM Administration Console.

3.2 Tools Modes

Select this mode to access to the general mapping tools.

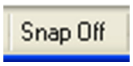
3.2.1 Overview

There are tools to adjust the layers or projection of the current map, draw and edit map features that are not controlled by Custom Forms and to connect to a GPS device.

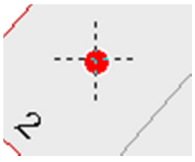
3.2.2 Working with Map Tools

3.2.2.1 General Operations

Use the tool bar at the top of the map to select map features for editing or other operations such as attribute statistics. Click on a map feature with the arrow tool or click on one corner of a selection box with the marquee selection tool and drag to create a rectangular area and select all the map features that intersect the rectangular area.



Click the status bar to toggle snap on or off.

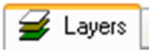

When snap is enabled, the select and drawing tool will snap to the location of a point feature or a vertex in a complex feature that is in a selectable layer, within four pixels of the pointer location.

Combine map clicks with the shift key to add or remove individual features from the selection set.

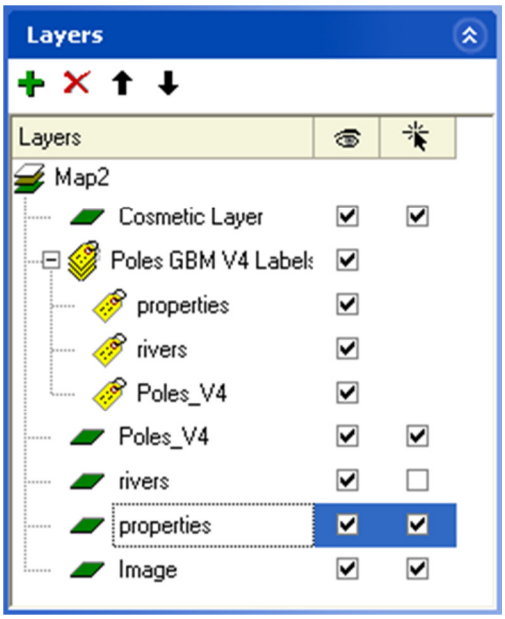
It is possible to select features from multiple layers using the combination of the shift key and left mouse click. In the production release this feature may be replaced by a special selection method associated with the statistics tool.

Click the de-select tool to clear the list of selected map features.

3.2.2.2 Layers sub-tab



The Layers sub-tab presents a list of map layers open in the current map window. This panel works in a very similar way to the standard MapInfo Layer Control tool except that for simplicity, not all options are shown.



Operation is very similar to the layer control tool in older versions of MapInfo Professional except that layers may be presented in groups and that map labels are presented in a separate labels group.

Use the tool buttons at the top of the layers window to add or remove map layers or change layer order.

Click on the check boxes to hide or show a layer on the map or to control whether objects in that layer can be selected using the standard arrow or marquee select tool.

Other controls (such as label expressions, layer edibility and style overwrite) are set in the workspace file that the map was opened from. See section 4.1.1.2 above for information on accessing the MapInfo Workspace Manager through GBM Portable.

3.2.2.3 Drawing sub-tab

Use this sub-tab for free form editing of graphical features on editable map layers.

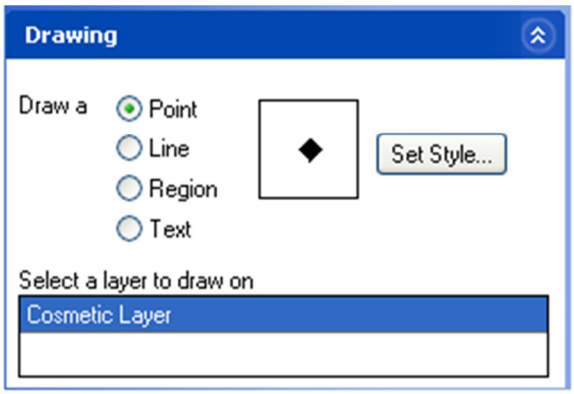
When this tab is active it is possible to draw new map features, to move or delete existing map features or edit nodes of existing linear or polygon (region) features. Only features on editable map layers can be targeted through this section of the software.

The MapXtreme workspace manager allows multiple map layers to be tagged as editable. Before drawing commences the user is prompted to select a target layer from those that are tagged in the workspace as being available for editing

Managed graphical and attribute editing is also possible through the Custom Forms (described bellow in section 4.2).

3.2.2.3.1 Drawing new map features

Click on the Drawing sub-tab to add the map drawing and editing buttons to the map tool bar.



Select the target layer and drawing style in the drawing tools sub-tab and then draw on the map with the pencil tool.

Items defined in custom forms (that have been tagged as editable in the custom forms definition) can be edited through the Custom Forms drawing sub-tab (see section 4.4 below) regardless of how the layers are configured in the geoset/workspace.

We recommend that layers that are targeted by custom forms be marked in geosets and workspaces as non-editable layers so that free form drawing in *Map Tools* Mode does not invalidate the more stringent edit controls and attribute validation rules defined through the custom forms.

Drawing normally proceeds by entering coordinated with the mouse or stylus. It is also possible to construct map features using one of the layout methods described below.

Open the Layout panel and choose one of the methods offered for the selected feature type. The following methods are supported

Points	Draw points by Distance/Bearing	Select a start point or draw a temporary anchor point. Enter the distance and bearing for the offset between the start location and the new feature – bearings are clockwise from true north
	Draw Intermediate Points	Select two existing map features. Specify the number of intermediate points to create equidistant point along an imaginary line joining the centres of the two selected features.
	Draw Point at Coordinates	Will draw a point at user-specified coordinates.
Lines	Draw line by Distance/ Bearing	Select a start point or mark an anchor point. Specify line length and bearing – angle is clockwise relative to true north.
Regions	Draw Circle	Select an existing feature or mark an anchor point to locate the centre of the new circle. Then specify the radius.
	Draw Rectangle	Select an existing feature or mark an anchor point to be the bottom left corner of the new rectangle. Then specify the width and height.

Use the standard *Select* (arrow) tool to select a feature from any selectable layer to use its location in one of the above feature construction methods

Use the *Anchor point* tool to mark a temporary construction point on the map. You may use construction points as the start points for distance/bearing offsets, as the centre point for circles or the bottom left point for rectangles.

3.2.2.3.2 Editing Graphical Style

The graphical style for rendering features drawn in this Map Tools free form drawing mode is selected through the Set Style button on the drawing dialog. Operation of the style picker is very similar to the corresponding tool in MapInfo Professional except when drawing text features.

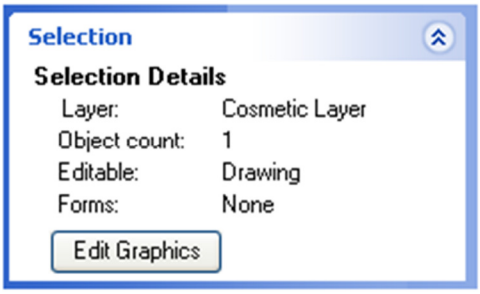
For text features the font size is defined within the context of a final plotting scale. For example text may be defined to render at 12 point for a map drawn at 1:25,000. If the map or on screen presentation scale is not 1:25,000, the text size will be adjusted accordingly. For example, if a map that included text entered with the above settings was printed or presented on the screen at 1:50,000, the text would actually be rendered at 6 point.

This method of specifying text is consistent with cartographic standards and ensures all text of a particular style renders at the same size, regardless of the zoom settings at the time it was drawn.

It is also possible to label GIS features with one of the feature attributes. Label text appears at a constant size regardless of the map zoom or plot scale. For example, a feature labelled will 12 point text will plot with text at 12 point size on a final plot at either the 1:25,000 or 1:50,000 map scale described above.

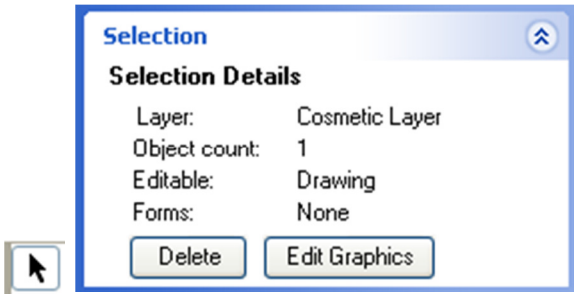
GBM Portable will honour label settings when a map is opened from a workspace. Use the MapXtreme Workspace Manger (accessible through the tools menu in GBM Portable) to set up labelling in a MapXtreme workspace.

To change the graphical style of a map feature, select it in the normal way (usually with the normal select or marquee select tool) so that it is listed in the selection panel on this sub-tab.



Click the Edit Graphics button to choose the new graphical style.

3.2.2.3.3 Deleting existing features



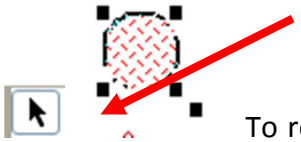
Choose the arrow tool and click on the map to select one or more existing features.

Open the S*election* panel to see details of the number of features that have been selected.

If the features are on an editable layer, you may click the *Delete* button to permanently remove those features. You will only be able to delete features that are on editable layers.

To delete features that are on layers targeted by custom forms, and that are not on editable map layers, open the custom forms tab, select the target feature through the attributes edit tool and delete through the delete button on the custom forms attribute editing tab.

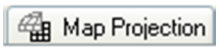
3.2.2.3.4 Changing existing geometries



To rotate an existing feature, choose the arrow tool and click on the map to select features on editable layers. Click and drag the rotation anchor to rotate the feature.

To edit nodes for an existing map feature, select the feature and choose the node editing tool from the map toolbar.

3.2.2.4 Map Projection sub-tab

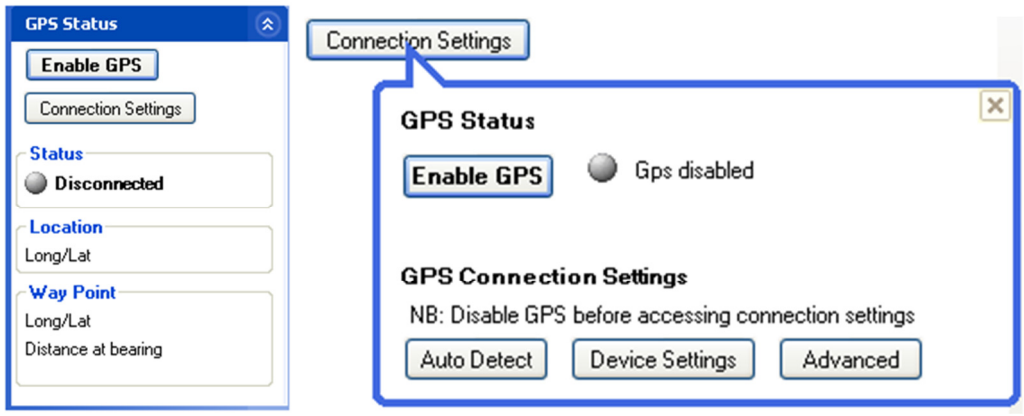


Maps are normally displayed in the map projection described in the geoset or workspace they were opened from. Use this tab to change the projection for displaying the selected map. Changing the map projection does not affect the underlying data.

Users are only allowed to choose projections that are listed in the set-up file *locate_projections.xml* (as configured through the GBM Administration Console) or the projection defined in the workspace or geoset file the map was opened from.

3.2.2.5 GPS sub-tab

Use this sub-tab to connect and configure a GPS unit. Once configured, the GPS may be used for moving-map display, drawing custom form objects through the Drawing tab in *Custom Forms* mode or moving map features to the current GPS location. It is also possible to maintain a separate log of GPS location as they vary with time.



Click *Enable GPS* to allow GBM Portable to use GPS input. The GPS unit will need to be delivering NMEA format GPS data, either through a physical connection (RS232 serial port or USB Port), or through a wireless port such as Bluetooth. It may be necessary to configure the Bluetooth wireless settings before GBM Portable can detect the GPS.

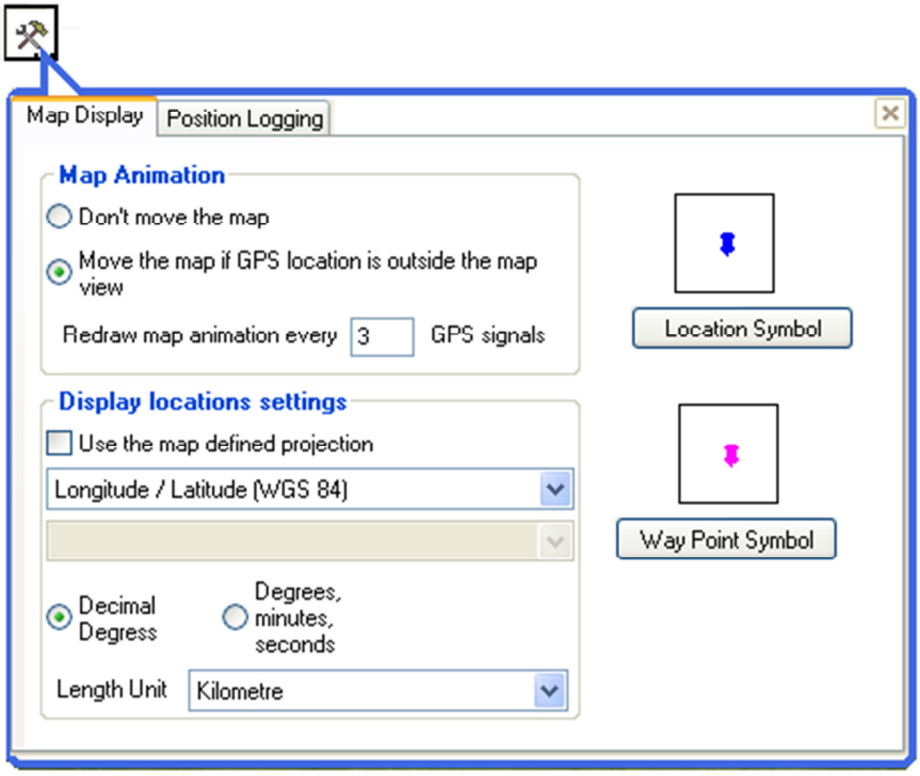
GBM Portable will attempt to read GPS locations from the communications channel on which the GPS was last located. If NMEA GPS data is not detected, GBM Portable will scan available communication ports and will auto-configure to read GPS locations if a suitable NMEA device can be located.

Click Connection Settings to manually set communications settings manually or take more direct control over port scanning.

GBM Portable expects a NMEA GPS that outputs locations in the WGS84 projection. GPS configuration shares software components with GBM Mobile. For further information on GPS connection and trouble shooting, refer to Appendix IV which has been extracted from the GBM Mobile user manual.

The status of the connected GPS, the current co-ordinates and the offset between the current GPS location and the active waypoint are all shown on the GPS sub-tab.

The current way-point can be set through the waypoint tool button. This button is added to the tool bar at the top of the map when the GPS sub-tab is selected.



Additional configuration options including moving map and position logging are available through the tools button at the bottom of the GPS tab.

3.2.2.6 Trouble shooting - GPS

Refer to Appendix IV.

3.3 Info Mode

Use this mode to interrogate the attributes associated with map objects or to mark a location on the map.

3.3.1 Overview

As described above, operation of the *Info*, *Find* and *Locate* sub-tabs are defined through project specific configuration files. Use the GBM Administration Console to build these files and copy them to the project sub-folder is necessary. Refer to Appendix III for more information about the GBM Administration console.

Specific XML files are:

Find.xml – configures the Find option that searches GIS attributes

Info.xml – configures the Info tool to describe how to group and report attributes of map objects under the mouse click point.

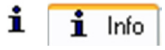
Locate_projections.xml – defines which map projections are available for selection through the *Locate Settings…* button on the Locate sub-tab.

In all cases, GBM Portable will use the configuration file in the current project sub-folder. If there is no file with the required name in that sub-folder, GBM Portable will adopt the default behaviour described in the equivalent file in the GBM Portable installation folder. The location of the GBM Portable installation folder is available through the *About* menu.

Refer to documentation on the GBM Administration Console in Appendix III for more information on the XML configuration files.

3.3.2 Working in Info Mode

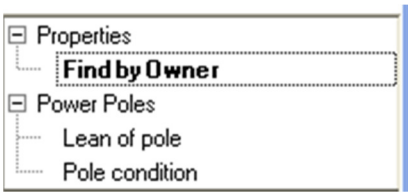
3.3.2.1 Info sub-tab



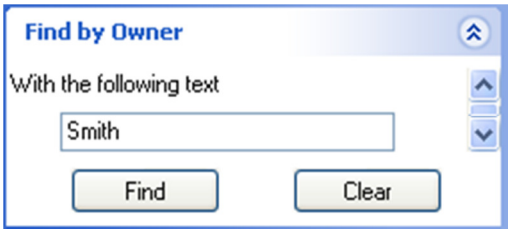
Select the Info tool from the tool buttons at the top of the map screen and click on a map feature. The Info sub-tab will open and display attributes of map objects under the click point on the map. Details displayed and the way these are laid out on the screen are defined in the set-up file *Info.xml* file (see above).

3.3.2.2 Find sub-tab

Select this sub-tab to see the list of pre-defined queries that have been described in the current *Find.xml* file.



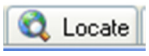
Select one of the queries and fill out the query conditions in the second panel.



Click the *Find* button to highlight the map location of those features whose attribute values satisfy the query conditions.

The way the map is zoomed and/or panned to show to the required map area is controlled through settings on the local computer. Click the *Find Settings…* button on the info tab to change those settings.

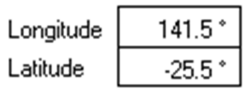
3.3.2.3 Locate sub-tab



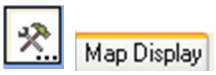
Use these controls to mark a map location from a set of co-ordinates.

The map projection/co-ordinate scheme used to define these co-ordinates does not need to be the same as that used to display the current map. Use the tools button at the bottom of the locate tab to choose the required projection/coordinate scheme. You will be able to choose a map projection from the

list of projections described in the *locate_projections.xml* file. Use the GBM Administration Console to edit this file.



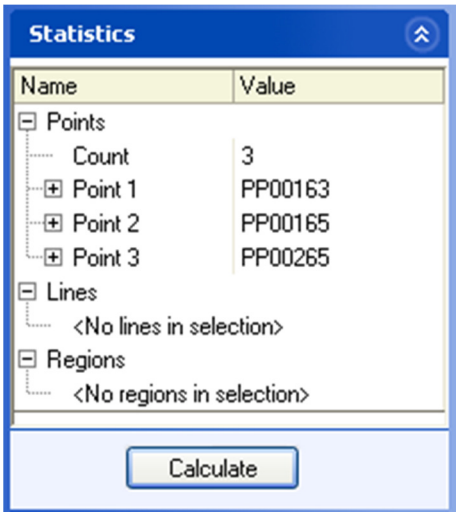
Enter the required co-ordinates and click the *Locate* button.



The location will be marked and the map zoomed and/or panned according to the map display settings.

3.3.2.4 Statistics sub-tab

Select this tab to report aggregated statistics on selected map features.



Map features are normally selected from the map using either the normal selection (arrow) tool in combination with the Shift or Control keys or through the marquee selection tool.

Select one or more map features and click the *Calculate* button.

Statistics are reported in the area and distance units set through the *Statistics Settings…* button. Coordinate units for map location reporting are also set through this button.

Only those map projections that have been entered into the *locate_projections.xml* file through the GBM Administration Console are available on the settings screen.

3.3.2.5 Trouble Shooting – Info tools

GIS Info tools operations are managed through XML configuration files that can be edited through the GBM Administration Console.

For a list of the .xml files that are controlling the mapping tools in the current session, enter Projects mode and click the *Project Settings…* button at the bottom of the screen.

3.4 Custom Forms Mode

When this tab is selected, GBM Portable works in Custom Forms mode and closely parallels the GBM Mobile operation.

3.4.1 Overview

In custom forms mode, normal drawing and map edit operation is suspended in favour of the more controlled environment specified in the current custom forms definitions.

GBM Portable custom forms are built using the same customs forms editor as GBM Mobile. Build the custom forms using the GBM Forms Editor. Forms need to be imported from the shared form definition file into the current GBM Portable project. Refer to section 1.7.3 for detail.

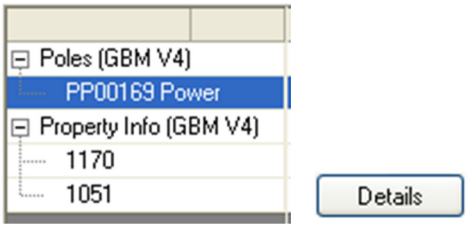
A brief explain of the main features of GBM Custom forms is presented below. Refer to the GBM Mobile User manual for more information on custom forms features and the forms editor.

3.4.2 Working with Custom Forms

3.4.2.1 Feature Attributes

Select the feature attribute tool and click on a feature on the map.

The Custom Forms tab will be selected automatically and will list the map features if there was more than one feature under the click point.



Select one feature and click the *Details* button to view or edit its attributes. If there was only one map feature at the click point, the attributes edit screen will open automatically.

Name	Value
PoleID	145
Type	Power
Lean	10-15 deg
Condition	Critical
Comments	
Inspected	9/05/1986
Longitude	174.182
Latitude	-24.6949
Property ID	395RUD3094

The data will be laid out on the attributes edit screen in the way described in the Custom From definition.

Click on a row in the data display to edit that attribute in the edit box at the top of the screen.

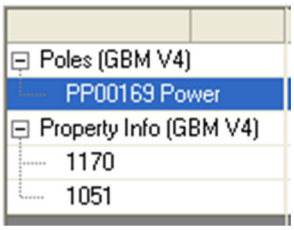
The edit box will display the prompt defined in the Custom Form and enforce the edit methods and data validation rules described in the custom form.

Click the Save button to save attribute edits.

Click the Cancel (undo) button to reject changes that have been made but not yet saved.

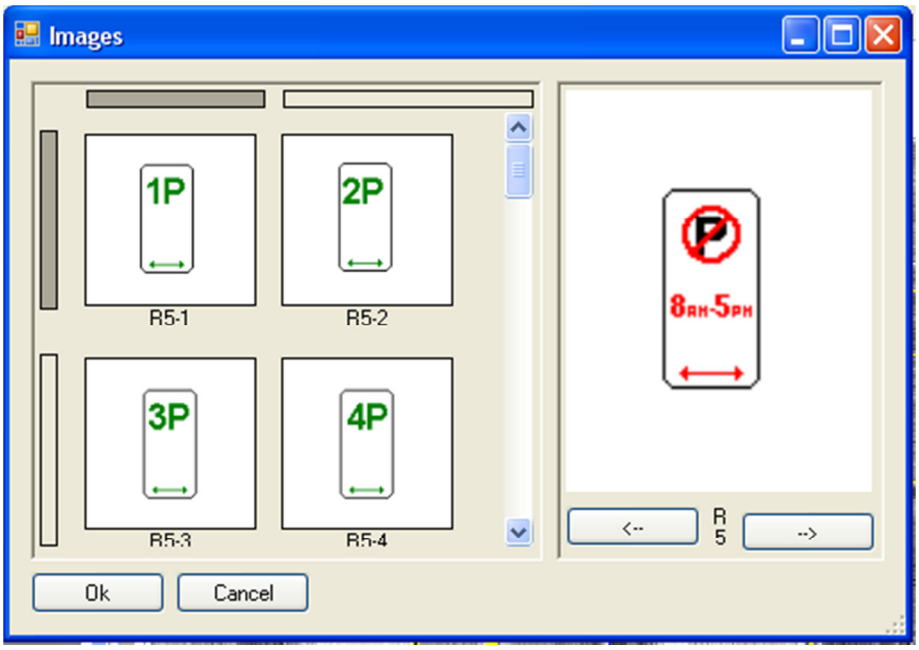
Click the delete button to delete the current feature. This will also remove the feature from the map.

Click the back button or click the *List* link at the top of the screen to close the record if there are no edits to save or undo.



Normally only those map features that are described in custom forms appear on the feature list. If the *Include all features* checkbox is checked, GBM Portable will list all features under the click point on the map. If necessary GBM Portable will auto-generate default forms for displaying the data attributes.

Pictorial pick lists operate in a similar fashion to GBM Mobile. With the required images installed, for those Custom Forms records that specify selection from a drop down list, users may choose either the text value or scroll through and select one of the images.

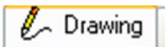


Pictorial pick lists can be enabled for custom forms data fields that are set to be filled from list selections. The names on the image files need to match the list of valid options in the drop down list. Refer to the GBM Mobile user manual for information about setting up custom forms and image sets.

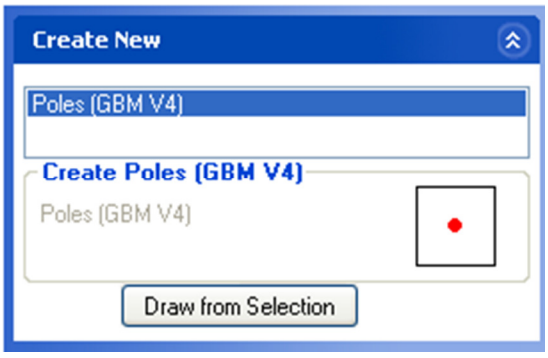
Images need to be manually loaded into the folder:

<projects folder>\<current project sub-folder>\resources\<form name>\<field name>

3.4.2.2 Drawing new map features

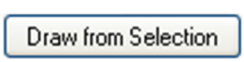


To draw a new map object, select the drawing sub-tab and choose the feature type from the list.



Only those custom forms which can target map layers that are open in the current map and whose specifications allow the creation of new objects (as defined in GBM Mobile Manager) will be offered in the list.

To draw directly on the map, select the drawing button from the toolbar at the top of the map.



To create a new map feature whose geometry matches that of an existing map object, select the object and click the *Draw from Selection* button. GBM Portable will make a copy of the selected object and apply the graphical style described in the form definition.

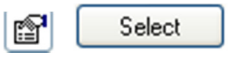
To create a new map object through the GPS, select the feature type from the drawing sub-tab in Custom Forms mode. Then expand the Create from GPS panel to view the GPS options. Linear and polygon objects are drawn by creating a GPS track and then clicking the *Draw Line* or *Draw Region* button to build a custom forms object using the vertices of the current GPS track.

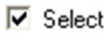
Before commencing GPS drawing, you will need to first turn on and configure the GPS through the GPS tab in *Tools* mode.

3.4.2.3 Graphical Editing of existing features

The drawing sub-tab is also used for graphical editing of map features that are based on Custom Form definitions.

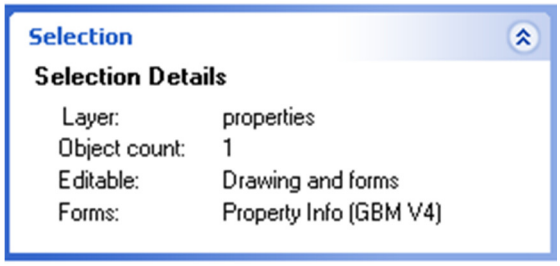
First select the target map feature through any one of the following methods:

- Click on the map with the arrow tool (use the combination of the left mouse key and the shift key to add or remove additional objects to the selection).
- Use the marquee select tool to select all map features within a rectangular area.
- 

List a number of map features in the attributes list screen, select one from the list and click the *Select* button to select those features.
- 

To select a single map feature, open the feature in the attributes edit dialog, click the select button and then close the record.

Once one or more features have been selected, the selection panel will detail the number of selected features and whether they are available for graphical editing.



Map features that are described in custom forms can be graphically edited through this section of GBM Portable, if the custom form permits graphical editing. Custom form edit controls are set in the custom form definitions and operate regardless of the edibility settings of layers in the current map.

To enable graphical editing of custom form based map features, check “allow creation of new map objects” in the forms editor of GBM Mobile Manager before exporting the forms to GBM Portable.

Features on editable map layers can be edited when the D*rawing* sub-tab is selected in *Tools* mode. These features cannot be edited in Custom Forms mode unless they

are also custom forms targets. It is normally not good practice to allow custom forms targets to be on editable layers as free form editing of objects in these layers bypasses the stringent edit controls defined in the custom form.

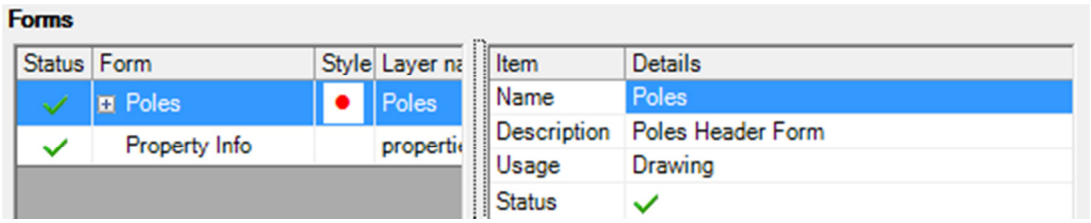
To move an existing map feature, select it and drag it across the map with the arrow tool.

To edit the geometry of an existing map object, select it and click the node editing tool. This tool is only available when a single map object is selected.

The *Move selection to GPS location* tool button is only available when a GPS device is operating. When this button is clicked, the map feature is moved so the centroid of the feature is placed at the geographical location read from the GPS device.

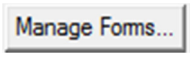
3.4.3 Custom Forms Set-up

Access the forms editor and forms importer from the Tools/Manage Custom Forms… menu item.



The screen presents a list of the custom forms that have previously been imported and their status. Use this screen to debug issues with custom forms operation.

This listing describes the custom forms that have been imported into the current project. These forms may differ from those described in the master forms file that may be shared across projects and with other GBM systems. If in doubt, re-import forms from the master file (see below).

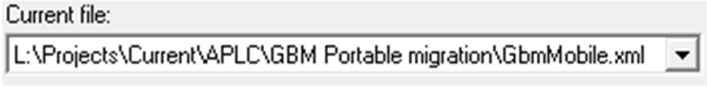


Click the Manage Forms button to access the forms editor and forms importer.

Shared Form Definitions: Use the top section of the panel to create and edit custom forms and to set up hierarchical relationships between forms. These tools operate on the copy of the forms file that is shared between GBM Portable and other members of the Global GBM software suite (GBM Mobile, GBM Pro, GBM Web).

Current Project:

Use the import forms button in the Current Project section to import individual forms from the shared form definition file into the current project.



Only forms in the current custom forms file, as set in the top of this panel, will be available for import into the current project. Once imported, those forms will be available when the current map contains the correct map layer.

Refer to the GBM Mobile user manual for information on building GBM Custom Forms.

When upgrading from one version of GBM Portable to another, it is occasionally necessary to re-import forms from the shared form definition file.

Refer to Appendix IV for further information.

3.4.4 Trouble Shooting Custom Forms

Custom forms are not presented when the target layer is not open in the current map.

Information about the location of the current *custom_forms.xml* file and the status of each form defined in that file is also available from the settings button at the bottom of the custom forms drawing tab.

The best way to verify the validity of a custom forms definitions is to open the form in the forms editor. Then reimport the forms into the current GBM Portable project.

If you are experiencing problems with the forms editor or forms are not behaving as expected, be sure to install the Forms Editor from your GBM Portable installation media and re-export the forms. Installing the latest version of GBM Portable's Forms Editor will update the forms exporter in the standard GBM Mobile Manger product and ensure it is compatible with your GBM Portable release.

3.5 Printing Maps

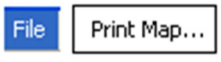
This module inserts the current map into a pre-defined printing template and sends it to the printer.

Printing templates commonly include title blocks, scale bars and north arrows and may also prompt for dynamic text (such as map title) at run time.

A number of standard print templates are shipped with GBM Portable. Refer to the section below on Printing Set–up for information on tailoring print templates to recognize regional or corporate preferences.

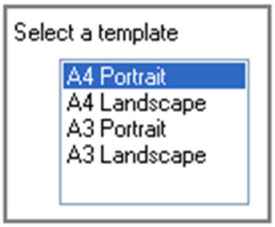
3.5.1 Printing – Step by Step

To print a map, first open the map in GBM Portable and then zoom and pan to show the required map area.



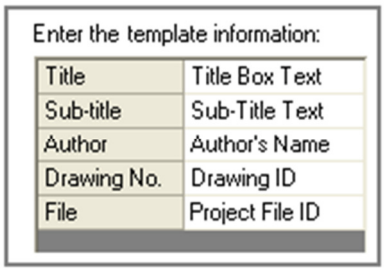
Select *Print Map* from the *File* menu to start the printing wizard.

A list box will open that shows the print templates that have been installed on your computer.



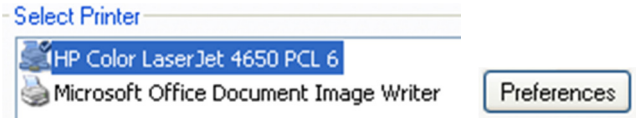
Choose one of the pre-prepared map templates and click *Next* to progress through the pages of the printing wizard.

You will be prompted for text to be drawn into the title box. The items requested will be those that are defined in the selected print template.

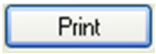


A bitmap image of the map will be generated at the scale and pixel density specified in the template and configuration files and passed to the Microsoft report write. A print preview will be presented on screen.

After reviewing the map layout click *Print* to continue.



Choose a printer from the list of printers available on your computer. Click on a printer to select it and then click *Preferences* to define paper size and adjust other settings for the selected printer.



Click *Print* to send the document to the chosen printer.

3.5.2 Printing Set-up

GBM Portable is shipped with pre-defined templates for printing to A4, letter and A3 page sizes. Custom templates can be prepared for specific projects and may address other page sizes or include project specific logos and legends.

Further information on print tailoring is presented in Appendix III. Contact Exa-Min or your local GBM Portable reseller to arrange a customized print layout if required.

4 GBM Data Manager

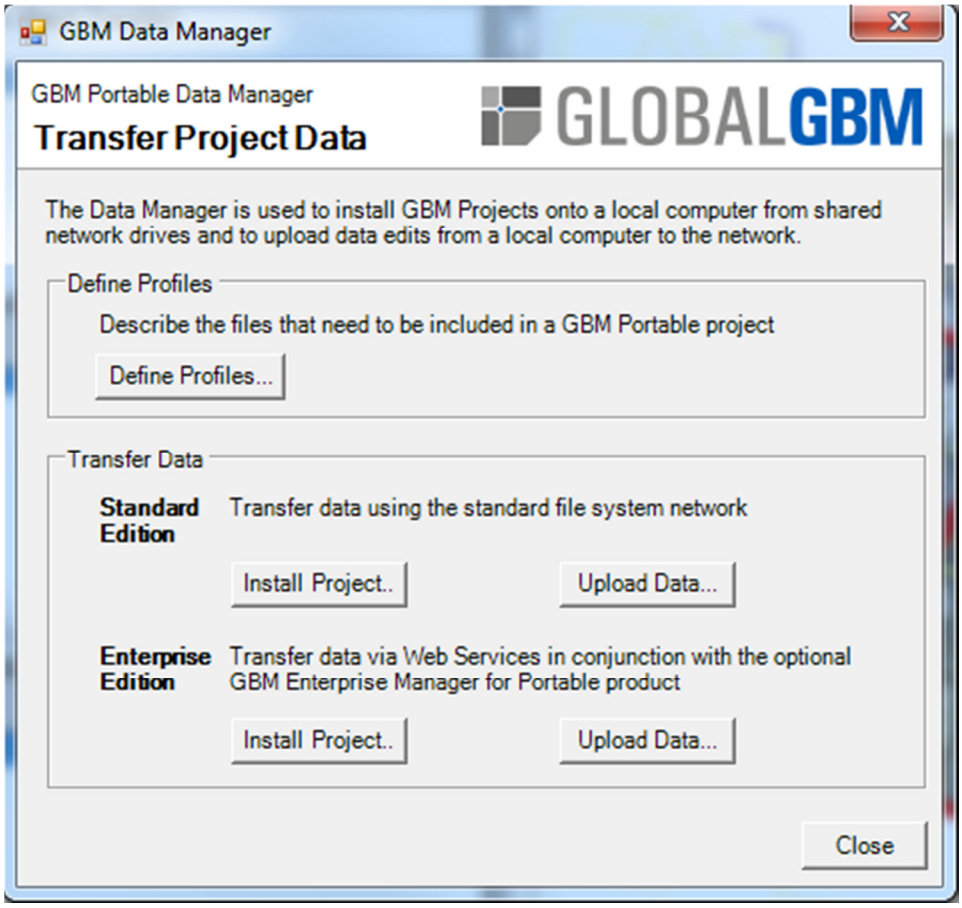
4.1 Overview

The GBM Data Manager is a collection of five utilities that enable the downloading of GBM Portable projects from a central server to a local Windows computer and the uploading of edited GIS files from the local computer to the central server.

These tools are normally only used for enterprise wider installations where there is a strong need to provide incremental file updates to a large number of GBM Portable installations across a Wide Area Network.

For smaller installation it is easier to ensure that all files are in the one project folder and to simply copy that folder and its contents to the target machine. If copying map definitions (.mws or .gst files) be aware of the standard MapInfo issues around embedded file names that may contain hard wired paths.

Start the tools through *Tools/GBM Data Manager…* menu item.


GBM Data Manager
GBM Portable Data Manager
Transfer Project Data
GLOBALGBM
The Data Manager is used to install GBM Projects onto a local computer from shared network drives and to upload data edits from a local computer to the network.
Define Profiles
Describe the files that need to be included in a GBM Portable project
Define Profiles...
Transfer Data
Standard Edition
Transfer data using the standard file system network
Install Project..
Upload Data...
Enterprise Edition
Transfer data via Web Services in conjunction with the optional GBM Enterprise Manager for Portable product
Install Project..
Upload Data...
Close

A GBM Portable profile is a set of XML files that together describe all the files that comprise a GBM Portable project. This set of files includes map files (.gst and .mws files), GIS files (MapInfo TAB file sets), configuration files such as Info.xml and Find.xml, custom form files and printing files.

GBM Portable profiles are stored in a user specified folder and are created by running the *GBM Portable Profile Manager* utility from the *Define Profiles…* button. Their creation is described below.

Once GBM Portable profiles have been created on a central server computer, the GBM Portable projects that they refer to can be downloaded to the local PC via two utilities, the *GBM Portable Project Loader*, which is run from the Standard Edition *Install Project…* button on *GBM Data Manager,* and the *GBM Portable Web Transfer – Install Project* utility, which is run from the Enterprise Edition *Install Project…* button.

The *GBM Portable Project Loader* installs Portable projects onto the local computer by copying files over a network from the central server computer whereas the *GBM Portable Web Transfer – Install Project* utility installs Portable projects on the local computer by copying files over the internet from the server computer to the local computer using a web service.

The web service is a separately priced addition to GBM Portable and is targeted at customers who need to transfer data across the internet or integrate with a central server. Refer to separate documentation for further information.

Similarly, the *GIS Layer Upload* utility uploads edited data from the local computer to the central computer by copying edited GIS files over a file network whereas the *GBM Portable Web Transfer – Upload Edits* utility copies edited GIS over the internet to the central server computer by using a web service, the same one that is used by the *GBM Portable Web Transfer – Install Project* utility.

4.2 Project Loader Utility

The *GBM Portable Project Loader* utility is used to install GBM Portable projects onto mobile Windows computers prior to disconnecting those computers from a network. It is also useful for updating copies of projects on mobile computers from a master copy of the project on a shared file system (e.g. office network).

Project installation is normally run from the computer that the project is to be installed onto (the destination or local computer). It relies on a GBM Portable profile that lists the files that need to be installed and the location they will be copied to on the destination computer. Profiles can be built centrally for subsequent access by a number of mobile computers.

To install a GBM Portable project onto a Windows computer that will be disconnected from the network:

- Build a GBM Portable project on the shared file system network and test that all GIS files, Configuration files and custom forms are operating correctly on the a computer that is connected to network.
- Build a GBM Portable profile for the project.
- Connect the mobile computer to the network and use the profile to install the project files

To update the files in a GBM Portable project on a mobile Windows computer:

- Reconnect the mobile computer to the shared file system network
- Upload any edited GIS files onto the network through the *GIS Layer Upload* utility (below)
- Run the *GBM Portable Project Loader* utility from the mobile computer and reselect the original profile to update files on the mobile computer if files on the shared network are more recent than those on the mobile computer.

Typical operation is shown in Figure 1. More detailed instructions are provided in following sections.

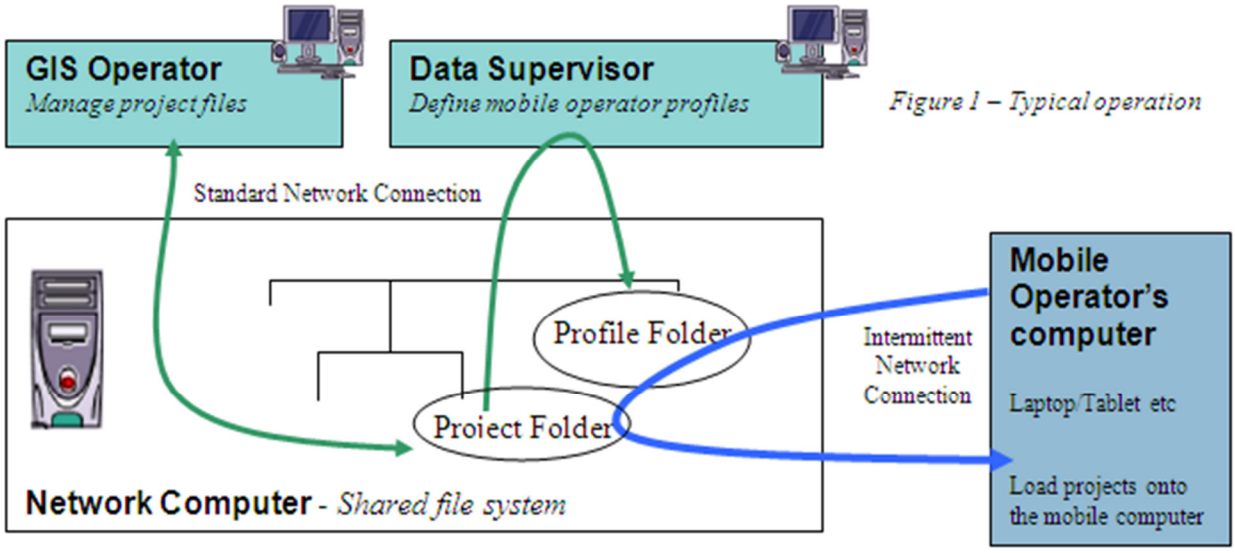


Figure 1.

Please establish a network connection between the local computer and the shared network that holds the master copy of the project to be installed. This may be through the wired network (LAN Cable), Wireless or Telephone modem.

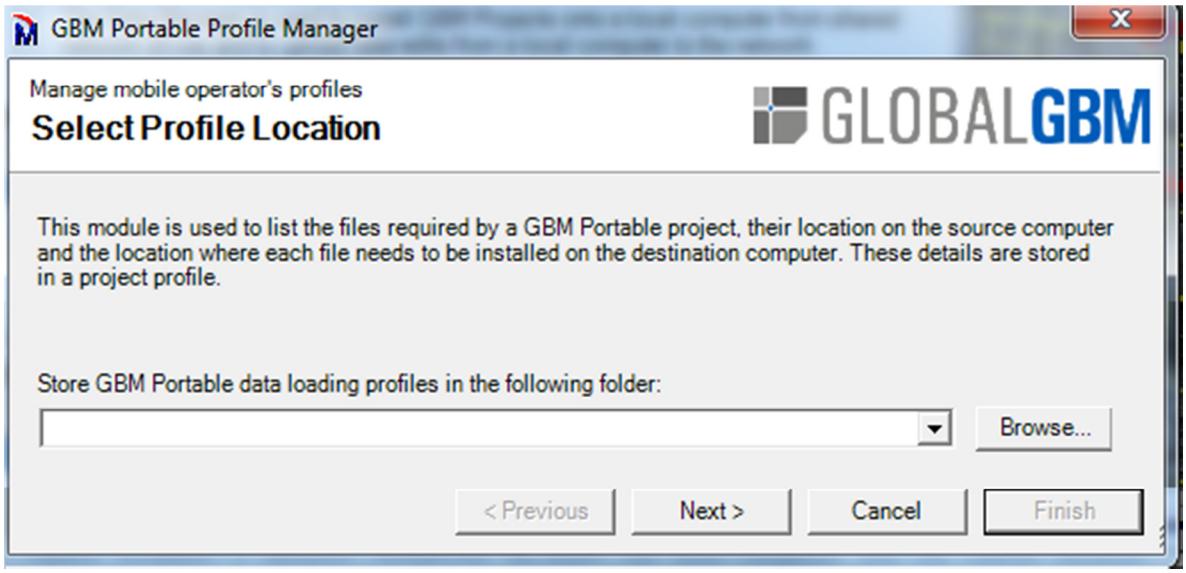
For connection through a Wide Area Network using the internet or mobile phone system, security can be maintained by setting up a Virtual Private Network.

This documentation assumes that the network is already established and that the Windows login account on the mobile computer has read access to project files on the shared file system.

4.3 Building a Profile

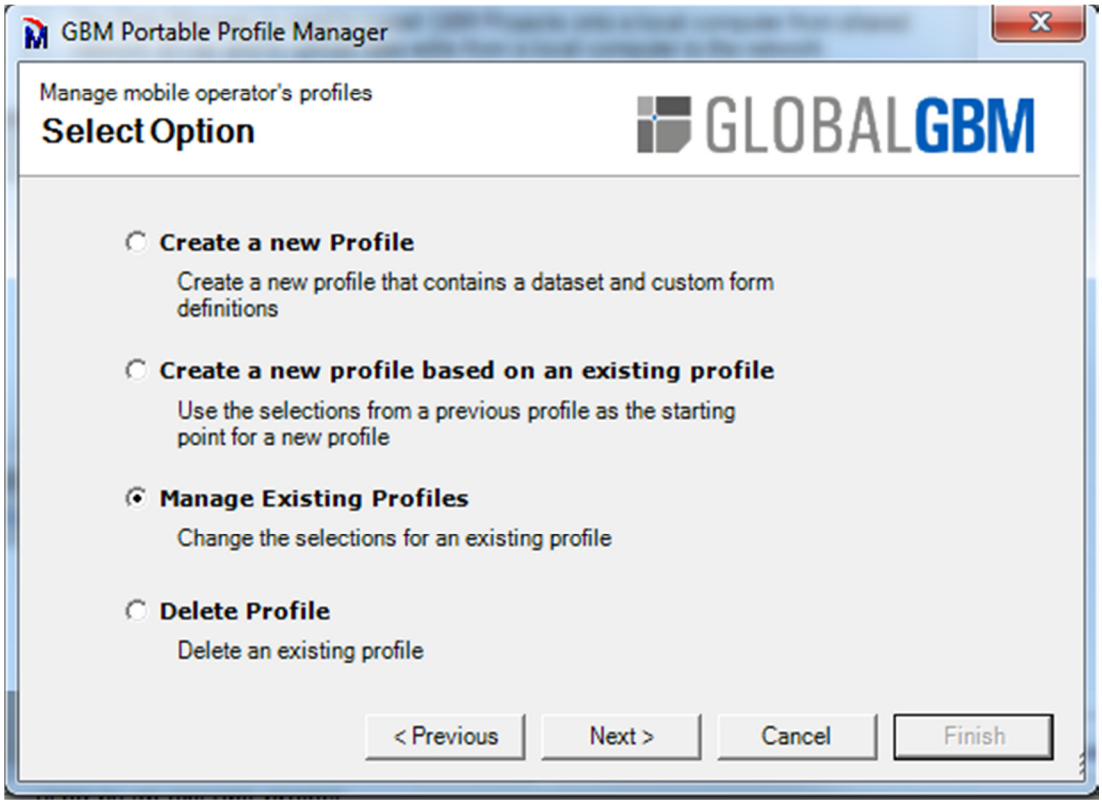
First build and test the GBM Portable project on the shared file network. Refer to the GBM Portable user manual for further information on building profiles and updating custom forms used by an existing project.

Select the *GBM Data Manager* from the GBM Portable *Tools* menu and press the *Define Profiles...* button to start the *GBM Portable Profile Manager* utility.

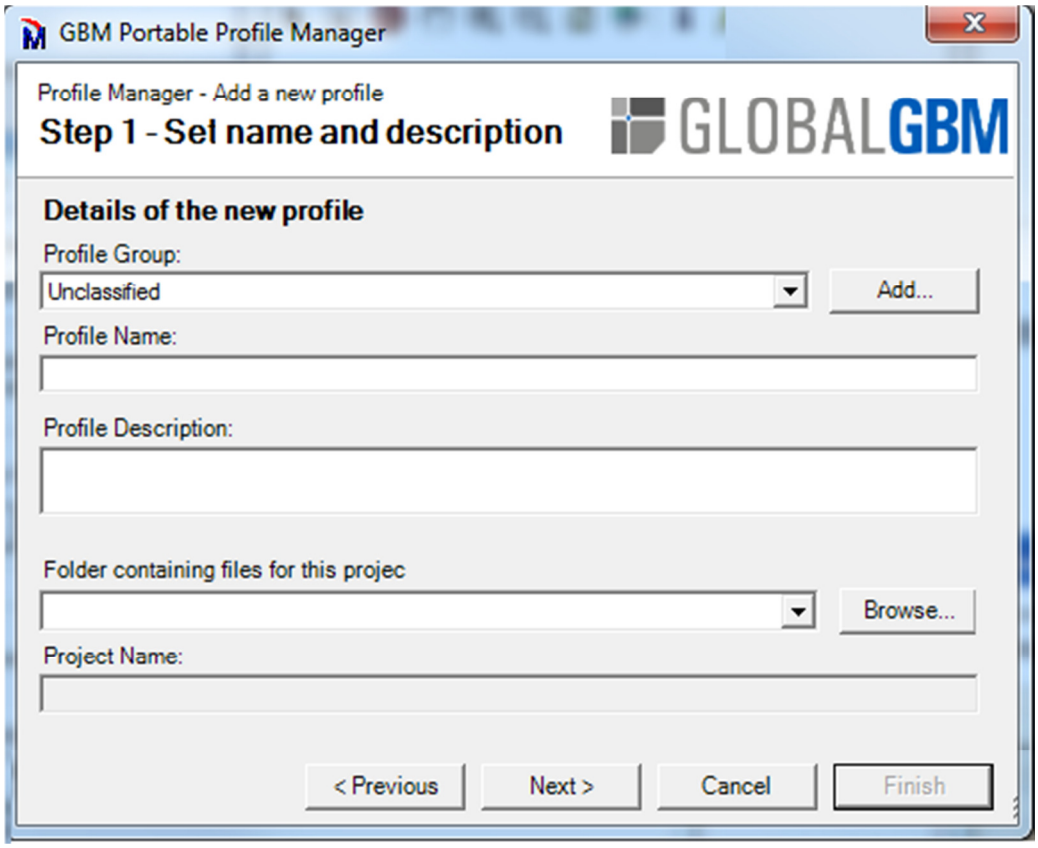

GBM Portable Profile Manager
Manage mobile operator's profiles
Select Profile Location
GLOBALGBM
This module is used to list the files required by a GBM Portable project, their location on the source computer and the location where each file needs to be installed on the destination computer. These details are stored in a project profile.
Store GBM Portable data loading profiles in the following folder:
Browse...
< Previous
Next >
Cancel
Finish

Select a folder in which to store the GBM Portable profiles that describe the files that need to be installed onto the mobile computer.

Set the profiles folder and then click on the Next button to move to the *Select Option* wizard page.

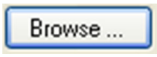

GBM Portable Profile Manager
Manage mobile operator's profiles
Select Option
GLOBALGBM
Create a new Profile
Create a new profile that contains a dataset and custom form definitions
Create a new profile based on an existing profile
Use the selections from a previous profile as the starting point for a new profile
Manage Existing Profiles
Change the selections for an existing profile
Delete Profile
Delete an existing profile
< Previous
Next >
Cancel
Finish

Select the option to create a new profile and click on the *Next* button.

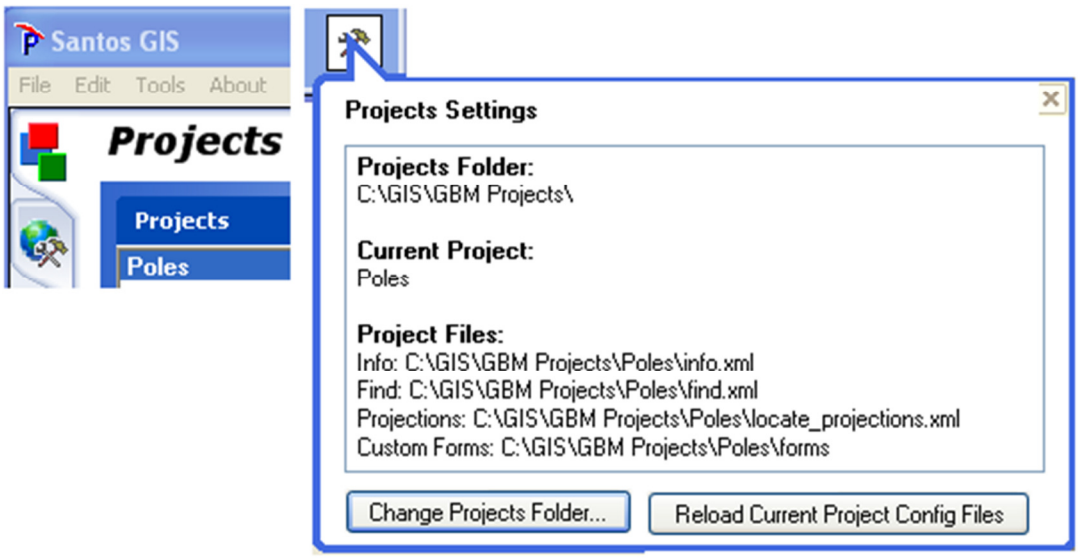


Step 1 - Describe the new project.

Profiles can be allocated to a group and *GBM Data Manager* can be configured on the local computer to only show profiles for a particular group. The default group is 'Unclassified'.



Browse for the project sub-folder that contains the GBM Portable project files. This will be a sub-folder of the Projects Folder that can be accessed through the settings button at the bottom of the Projects Mode screen when working with a project in GBM Portable on the shared file system network.



GBM Portable Profile Manager
Profile Manager - Add a new profile
Step 2 - Accessible Files
Source Computer
When data is loaded onto the end-user computer, the Profile Loader will be able to read files stored in the following locations on the source computer
All files on the network
Files in the profiles folder and the shared data folder
<Shared data folder> is:
Files stored in the profile folder only
Destination Computer
Files tagged for loading in the shared data folder will be installed in this folder on the destination computer:
C:\GBM Portable Data
< Previous
Next >
Cancel
Finish

Step 2 – Choose the file storage option

It is assumed that the profile will be used to copy project files that will be copied from a central location to a local computer. The copy process will run from the mobile computer that has been temporarily connected to the shared network. When loading a project onto a mobile computer, files will be copied from the central shared network (the source computer) to the mobile system (the destination computer).

The mobile computer will need to access the profile folder to read details of the files that need to be installed. It is understood that the mobile computer may or may not have access to other files on the network. This may be because some of the project files are stored on an end-user workstation that is likely to be off-line when the copy needs to occur or perhaps on a folder that the operator of the mobile computer does not have permissions to access.

Depending on the options chosen in this screen, files will be copied to a folder that the mobile computer will be able to access when needed.

There are three options, identified by which one of the three radio buttons is selected in the above screen.

- **Select Option 1** (*all files on the network*) if the mobile computer will be connected to the same network as is the computer on which the profile is being built, and the mobile computer will have the same file system access rights as the computer used to build the profile. This is the most common case.
- **Option 2** (*Files in the profile folder and shared data folder*) is useful for cases where the computer on which the profile is built may be off line at the time the profile is used to install a project onto a mobile computer.

  This option should be chosen when some project files are stored on a local workstation that may be turned off or on files that are not shared for access to all users. In this case,

set the shared data folder to a portion on the shared file server that will be available to the mobile computer whenever that computer is connected to the network.

With this option selected, files that are not already in the shared data folder will be copied to that folder.

- **Option 3** (*Files stored in the profile folder only*) is useful for less formal networks where shared data folders have not been established.

  Copies of all the files that the project requires are copied into the same folder as the profile. If the mobile computer can open the profile, it will be able to access all the files needed to install the project onto the mobile computer.

While selecting Option 3 will ensure that project files are always available to the mobile computer, it does mean that installations are run from a copy of the project rather than the original files. If any of the files in the project folder are updated, the profile will need to be updated also.

If the project is built on a shared folder and that folder is registered in the profile (Option 2) where mobile operators are granted read-only access to that folder as shown in figure 1, there will be no need to refresh the profile whenever project files are updated. It will still be necessary to refresh the profile if there are any substantial changes to the project such as the addition or removal of custom forms or the addition of new layers to the map workspaces.

Option 2 is particularly useful where more than one project is to be loaded onto the mobile computer and files are shared between those projects. For example, there may be a GIS layer represented by a large raster image file. In either Option 1 or Option 3, a copy of the shared file will be loaded into each project folder on the mobile computer. If Option 2 is selected, the software will not load a second copy of any file that is already installed in the shared data folder on the mobile (destination) computer. Reloading either profile will update the shared files on the destination computer.

Option 2 is also useful when files are replicated to notes on a Wide Area Network as shown in figure 2. Only the shared data folder and the profile folder need to be replicated. Files that are required by the project and are not in either of these folders will be automatically copied to the profile folder.

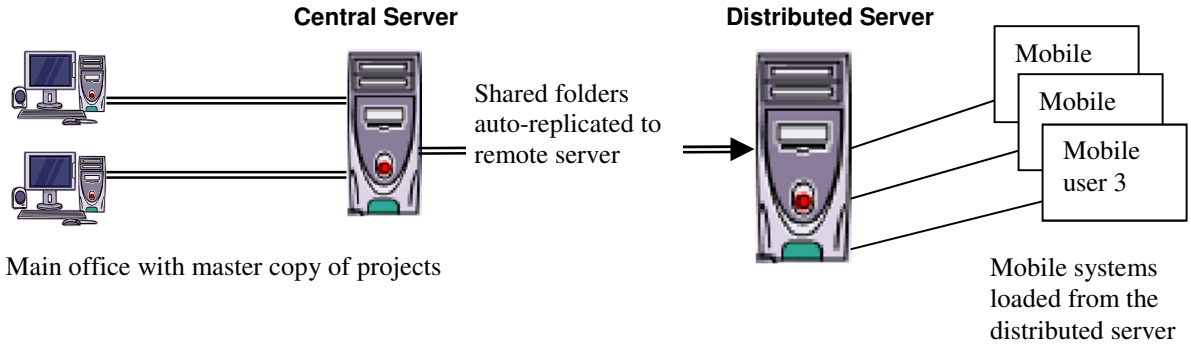
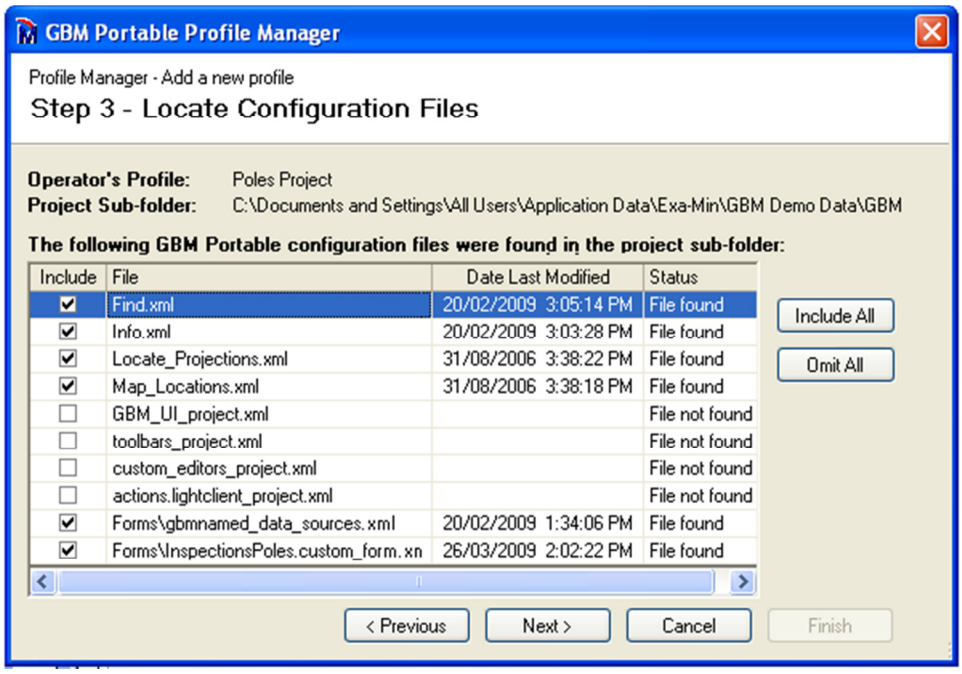


Figure 2 – Wide Area Network with distributed file servers

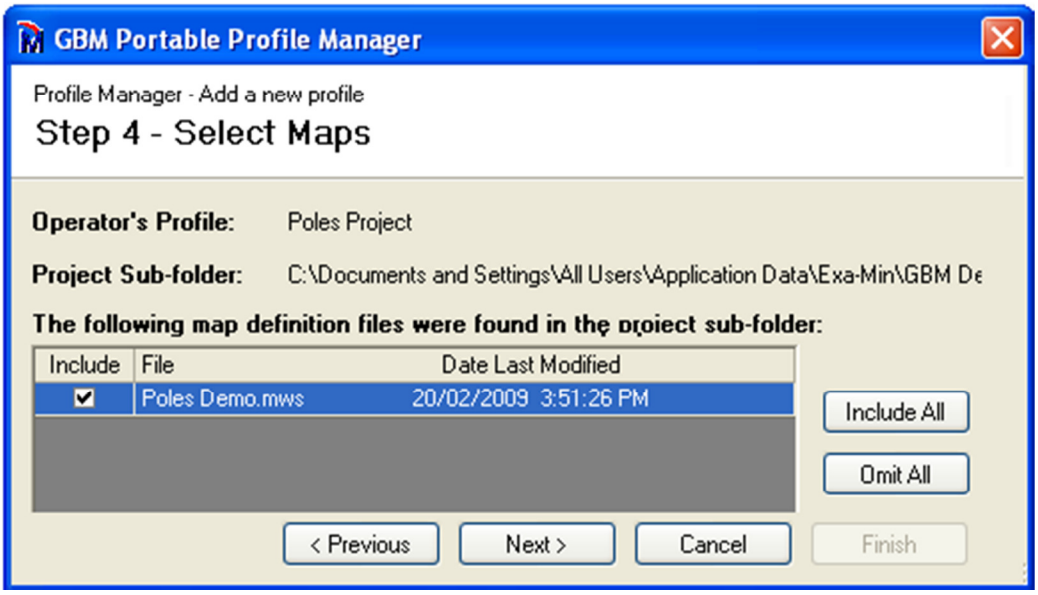
The profile transfer utilities will correct file references in MapInfo Workspaces or Geosets should it be necessary to re-locate any files. For example, file references that point to the shared data folder on the server will be remapped to the equivalent location on the mobile computer. If files are automatically copied to the profile folder, they will be installed onto the

appropriate project folder on the destination computer and the path references in workspaces will be remapped to the location where the files are stored on the destination computer.


GBM Portable Profile Manager
Profile Manager - Add a new profile
Step 3 - Locate Configuration Files
Operator's Profile: Poles Project
Project Sub-folder: C:\Documents and Settings\All Users\Application Data\Exa-Min\GBM Demo Data\GBM
The following GBM Portable configuration files were found in the project sub-folder:
Include
File
Date Last Modified
Status
Find.xml 20/02/2009 3:05:14 PM File found
Info.xml 20/02/2009 3:03:28 PM File found
Locate_Projections.xml 31/08/2006 3:38:22 PM File found
Map_Locations.xml 31/08/2006 3:38:18 PM File found
GBM_UI_project.xml File not found
toolbars_project.xml File not found
custom_editors_project.xml File not found
actions.lightclient_project.xml File not found
Forms\gbmnamed_data_sources.xml 20/02/2009 1:34:06 PM File found
Forms\InspectionsPoles.custom_form.xn 26/03/2009 2:02:22 PM File found
Include All
Omit All
< Previous
Next >
Cancel
Finish

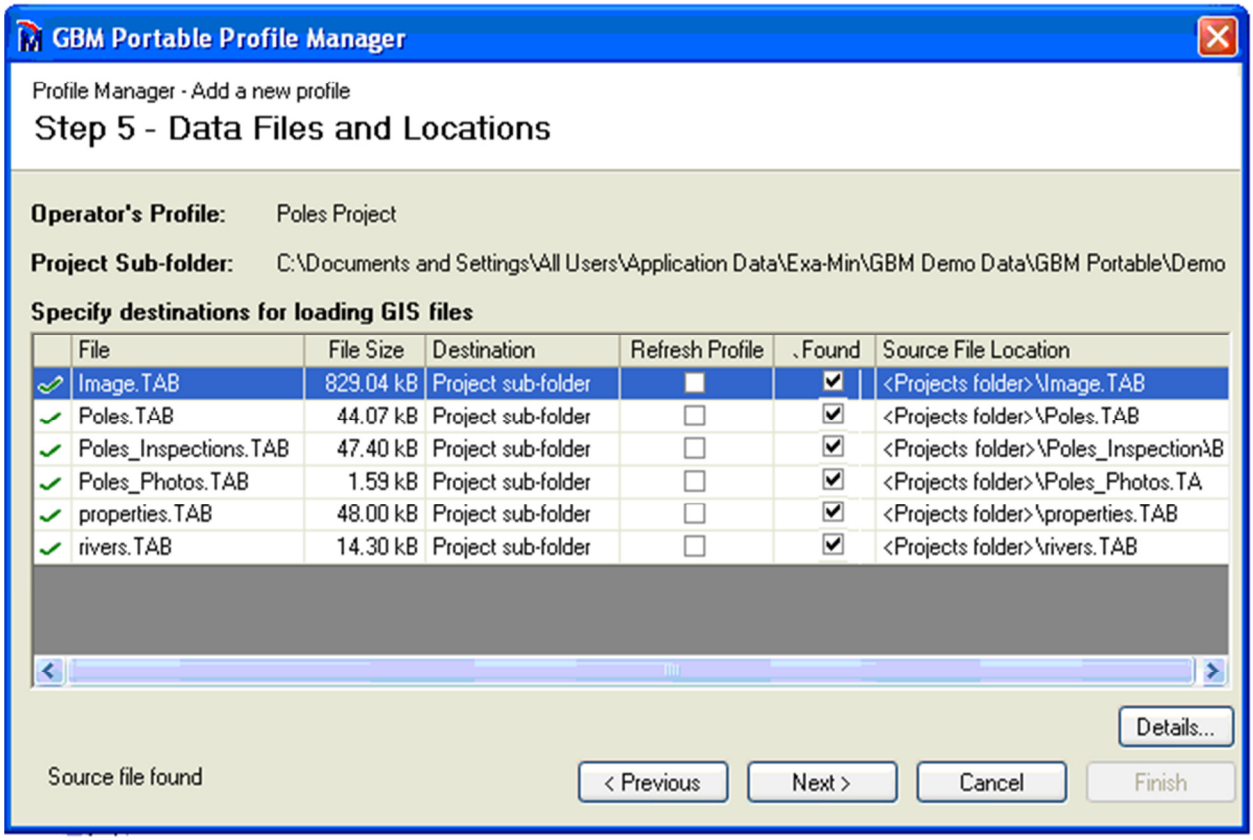
Step 3 – Check project files

The wizard will search for GBM Portable or GBM Office configuration files in the project folder and list those that are found. In normal circumstances, all these files should be installed. Check that the project does contain the expected configuration files or uncheck any files that should not be installed in this specific instance. Refer to the GBM Portable user manual for more information about specific configuration files.



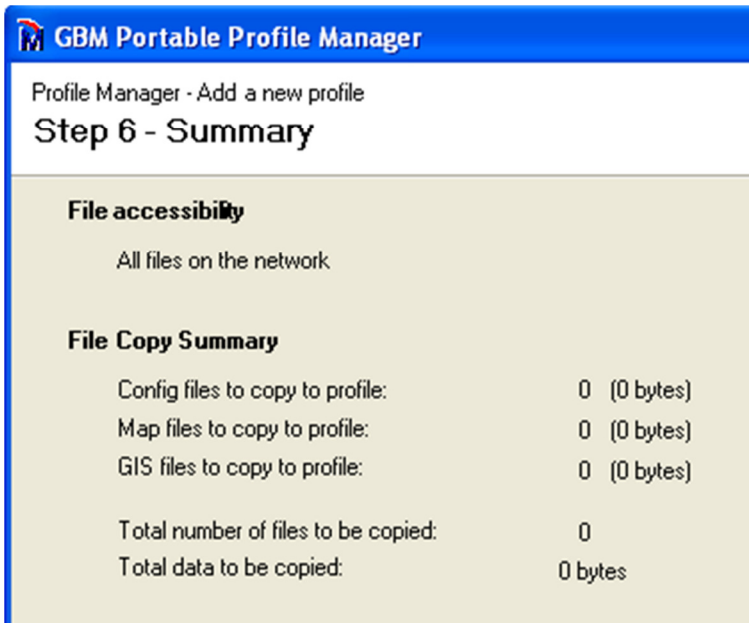
Step 4 – Select maps

The profile wizard will list all MapInfo workspaces (.mws) and geoset (.gst) files in the project folder. If necessary, uncheck any maps that should not be made available to the mobile operators.



Step 5 – Data Files and Locations

The wizard will not investigate GIS files referenced in all the MapInfo workspaces and Geosets selected in Step 4. It will check that all files are available on the source computer.



Step 6 – Summary

The wizard displays the number of files that will be copied into the profile. Because the file accessibility is *All files on the network*, no files need to be copied into the profile.

Click *Next* to write or update the profile. Files will be copied to and workspaces/geosets updated as required to prepare the project for subsequent installation onto a new computer. If an existing profile has been edited, the copy of any out of date files in the profile folder will be updated with fresh copies from the master copy of the project.

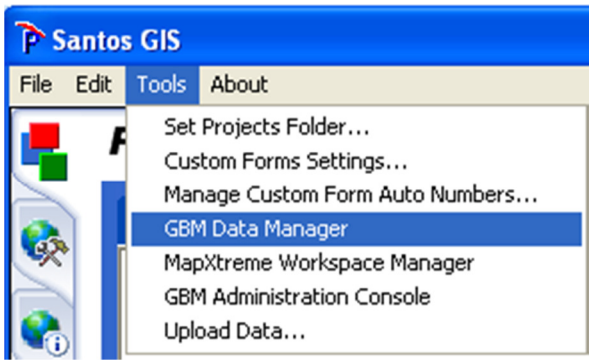
4.4 Downloading a Project across a File System

This process will install a GBM Portable or GBM Office project onto a mobile computer for subsequent operation after the network connection has been severed.

The process works through a pre-configured Load Profile. Refer to Section 4.3 for instructions on building profiles.

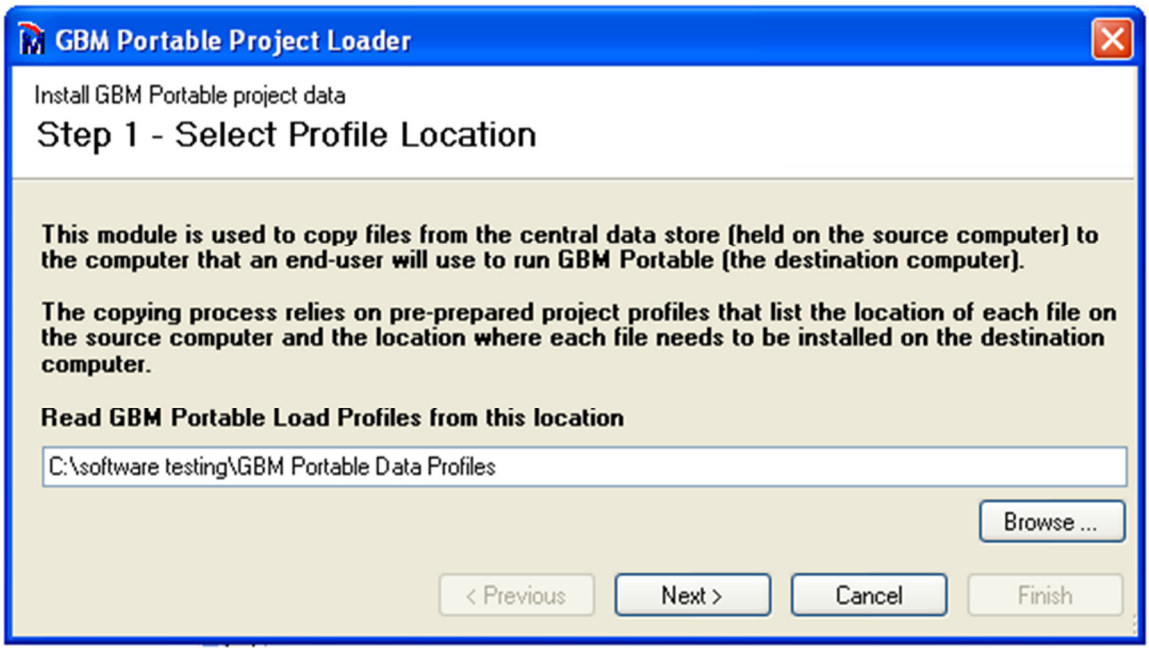
First ensure that GBM Portable has been installed on the mobile computer and that the computer has a network connection to the computer holding the master copy of the profile. The folders that need to be available to the mobile computer will depend on the file storage options selected in Section 4.3 above.

Be aware that it is possible to overwrite files on the mobile computer when refreshing a project from the master copy on the shared file system. Be sure to retrieve any changed working data (GIS files that have been edited on the mobile computer) before reloading a project. See Sections 4.7 and 4.8 below for information on uploading data edits.



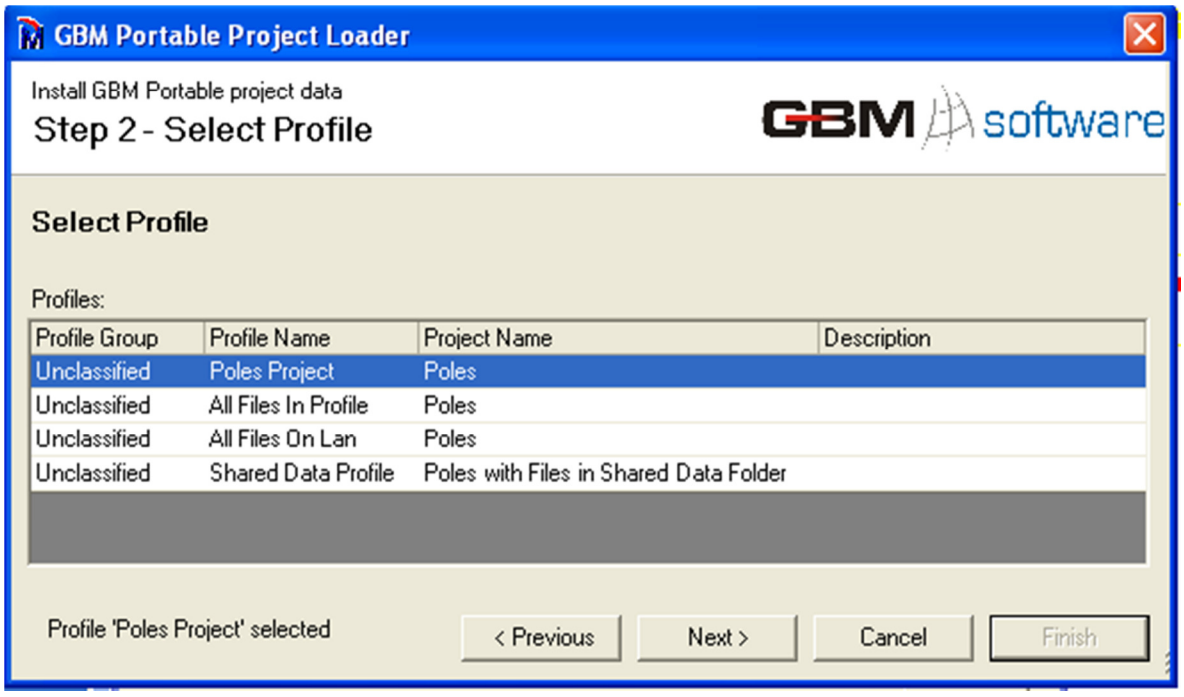
Start the *GBM Data Manager* from the GBM Portable *Tools* menu. GBM Portable needs to be run from the computer that the data is being installed onto.

Click on the Standard Edition *Install Project...* button. This will start the *GBM Portable Project Loader* utility which will download a Portable project across a network.

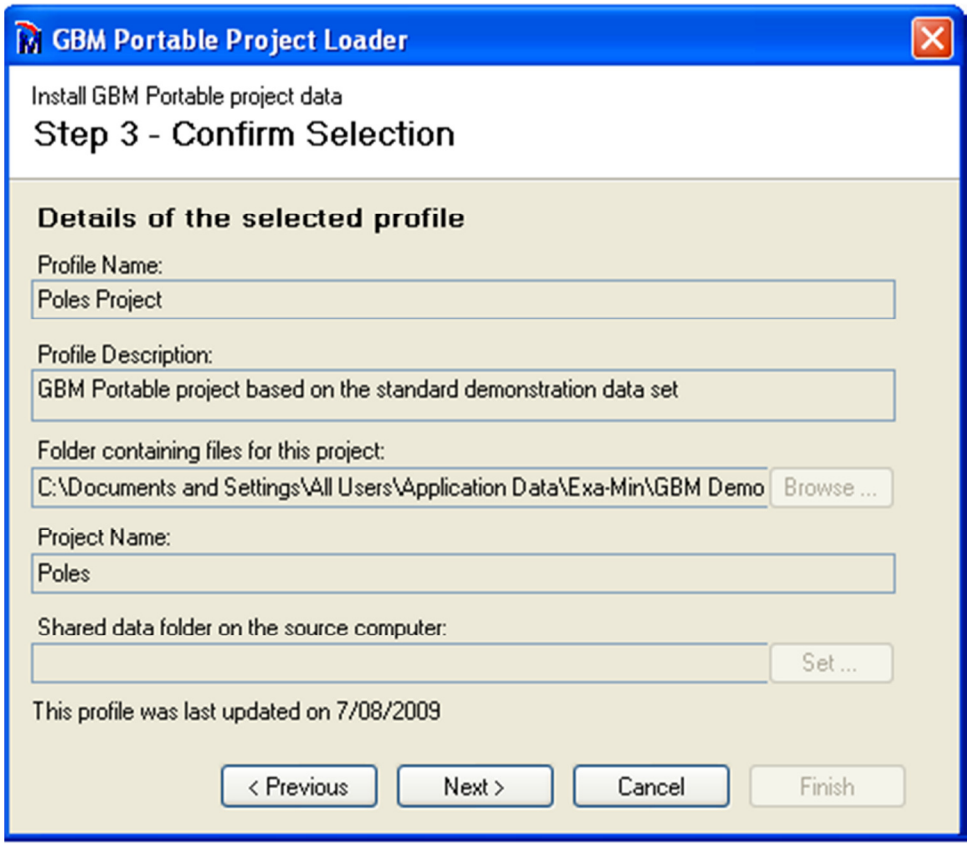

GBM Portable Project Loader
Install GBM Portable project data
Step 1 - Select Profile Location
This module is used to copy files from the central data store (held on the source computer) to the computer that an end-user will use to run GBM Portable (the destination computer).
The copying process relies on pre-prepared project profiles that list the location of each file on the source computer and the location where each file needs to be installed on the destination computer.
Read GBM Portable Load Profiles from this location
C:\software testing\GBM Portable Data Profiles
Browse ...
< Previous
Next >
Cancel
Finish

Browse to the folder that holds the GBM Portable profiles. Section 4.3 above describes how to create new profiles.

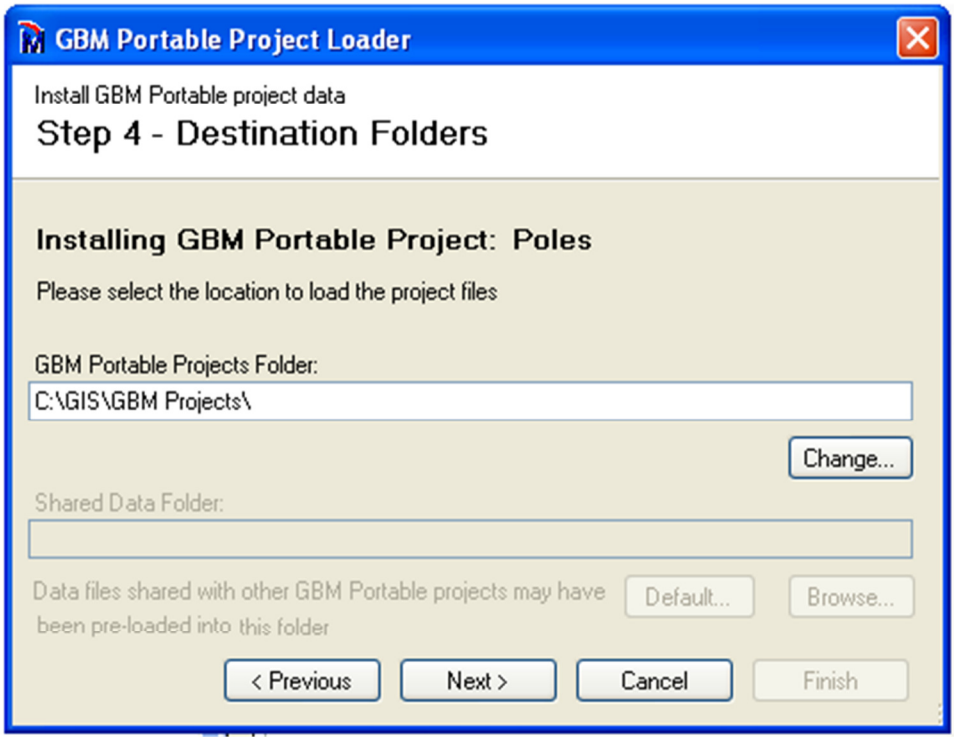
Click on the Next button to move to the *Step 2 – Select Profile* wizard page.



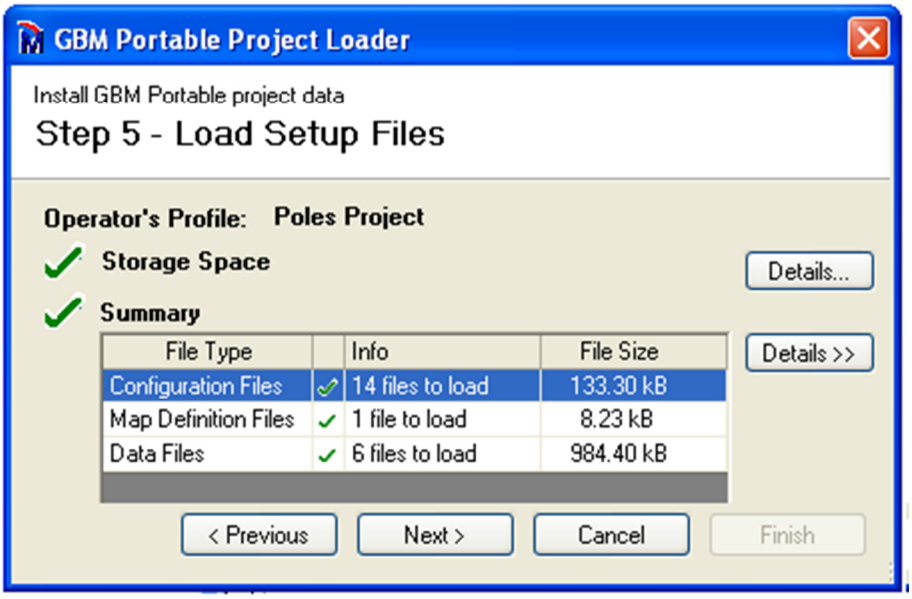
Choose the profile to be installed from the list of profiles stored in the profile folder.



Details of the selected profile will be displayed for confirmation. Click *Next* to continue.

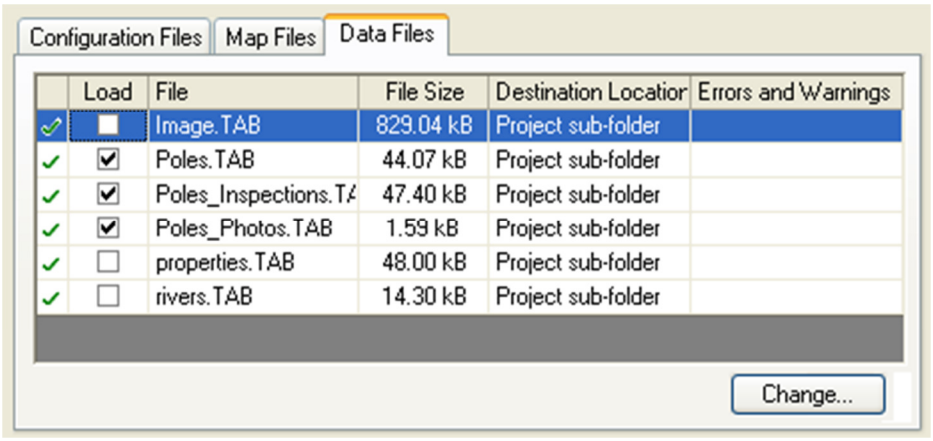

GBM Portable Project Loader
Install GBM Portable project data
Step 4 - Destination Folders
Installing GBM Portable Project: Poles
Please select the location to load the project files
GBM Portable Projects Folder:
C:\GIS\GBM Projects\
Change...
Shared Data Folder:
Data files shared with other GBM Portable projects may have been pre-loaded into this folder
Default...
Browse...
< Previous
Next >
Cancel
Finish

If necessary, click on the *Change…* button to set the location of the projects directory where the folder that contains the project files will be created. If a *Shared Data Folder* was defined in the profile (see section 4.3 above) browse to specify the location of that folder on this (destination) computer.



The *GBM Portable Project Loader* will calculate the amount of data that needs to be installed onto this computer and check that there is sufficient free disk space. It will also check that all the required files are available on the source computer.

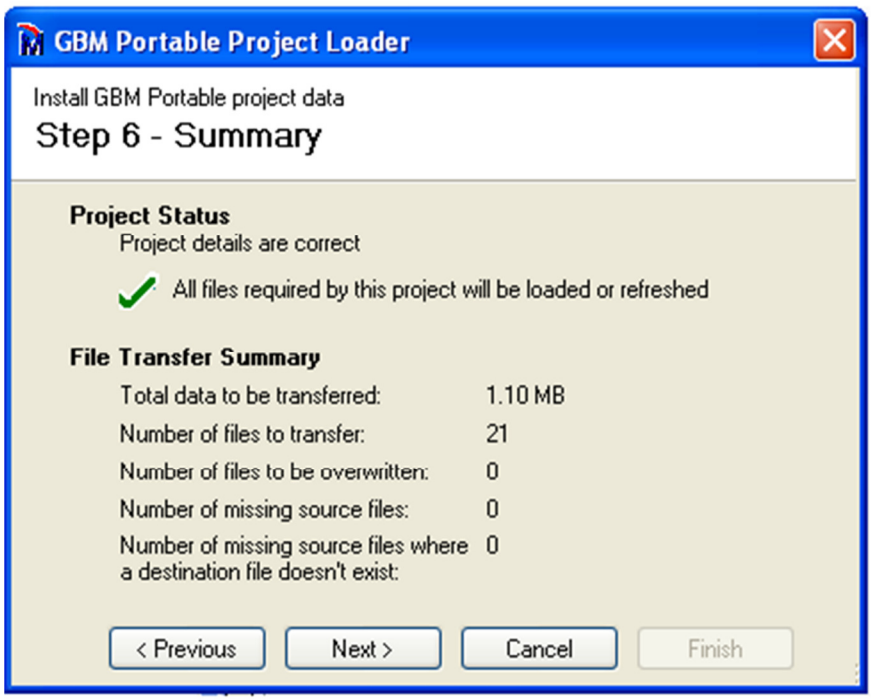
Any conditions that are likely to affect the installation will be highlighted on this screen. If necessary, click the Details button to view errors and warnings.



Files will only be tagged for copying to the destination computer if a file of the required name is not already present in the destination folder or the copy in the destination folder is older than the copy in on the source computer.

Click *Change…* for more information or to force/disable file refresh.

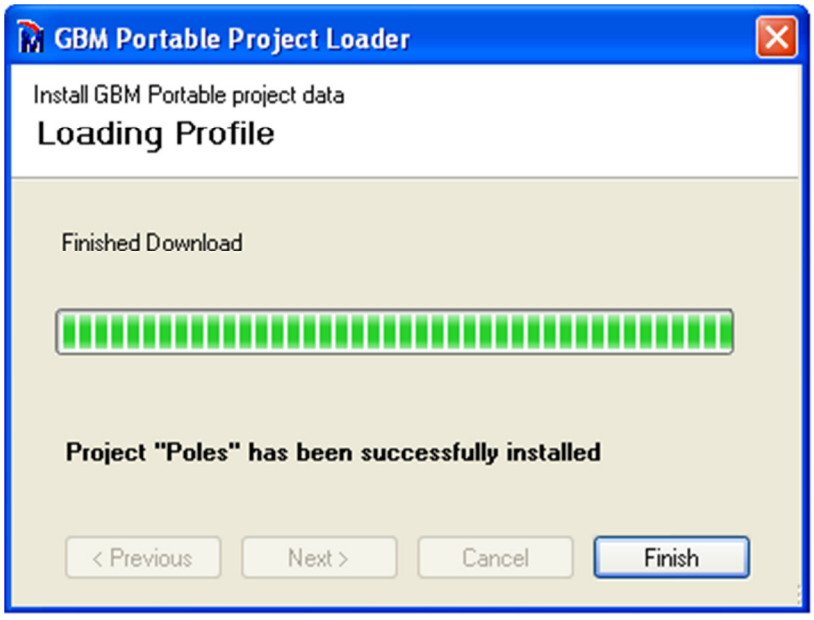
Click *Next>* to start the file transfer. New files will be copied to the mobile (destination) computer or refreshed from the master copy on the source computer. MapInfo Geosets and Workspaces will be automatically updated to reference the new files if necessary.


GBM Portable Project Loader
Install GBM Portable project data
Step 6 - Summary
Project Status
Project details are correct
All files required by this project will be loaded or refreshed
File Transfer Summary
Total data to be transferred: 1.10 MB
Number of files to transfer: 21
Number of files to be overwritten: 0
Number of missing source files: 0
Number of missing source files where a destination file doesn't exist: 0
< Previous
Next >
Cancel
Finish

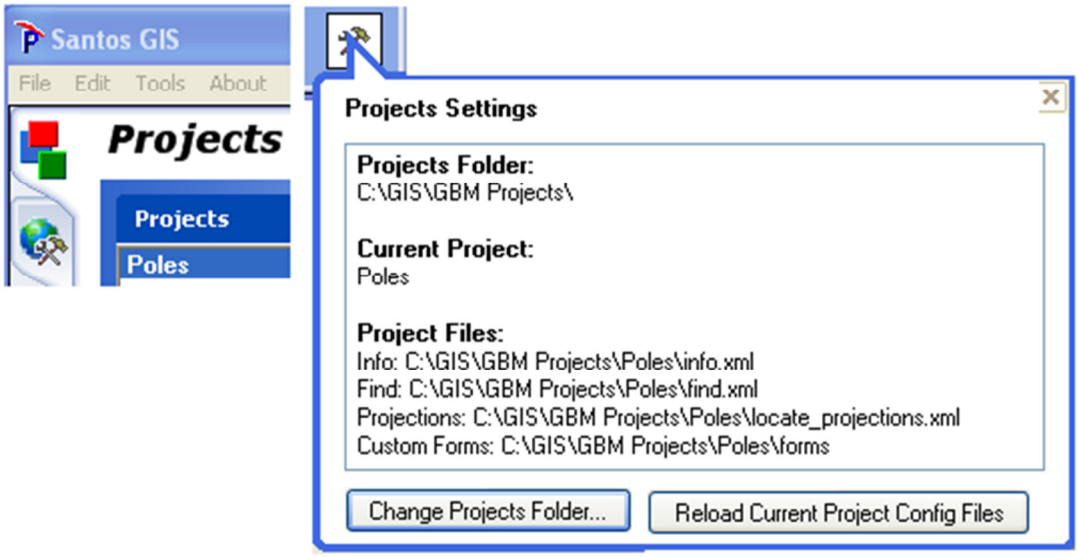
The next screen will present a summary of the proposed file transfer operation including details of any files on the destination computer that will be overwritten by this process.

Do ensure that any working data has been retrieved from this computer before allowing any files to be overwritten. See Sections 4.7 and 4.8 below for information on uploading data edits to the central computer.

After checking that no important files are likely to be overwritten, click on the *Next* button to initiate the transfer.



This process will install a new project sub-folder in the Projects Directory or update files belonging to an existing project. While new projects will be created successfully, they may not list immediately on the GBM Portable Projects screen.



To refresh the project list, either exit and restart GBM Portable / GBM Office or activate the *Change Project Folder…* option on the tools menu in Projects Mode.

4.5 Data Upload Overview

The *GBM Data Manager* provides two data upload utilities, the Standard Edition *GIS Layer Upload* utility and the Enterprise Edition Data Services utility.

These data upload utilities copy edited and/or selected GIS files to a central folder location on a server computer and arrange the files in the correct hierarchy for access by GBM Mobile Merge or GBM Autoloader. The .gmo batch control file required by GBM Mobile Merge and GBM Autoloader is created automatically.

The *GIS Layer Upload* utility copies files across a file system whereas the *GBM Portable Web Transfer* utility copies files over the internet using a web service that resides on the server computer.

4.6 The GIS Layer Upload Utility

Operation of the *GIS Layer Upload* utility is controlled through the following two configuration files:

- GBM.GISLayer.UploadLocations.xml
- GBM.GISLayer.UploadConfig.xml

Both files are located in the *gbm.config* sub-folder of the software installation folder (normally C:\Program Files\Geobasemap\GBM Portable) and can be modified through a regular text editor. Configuration instructions are provided in the body of the files. These are .xml text files. Please do not save them in proprietary formats such as Microsoft Word.

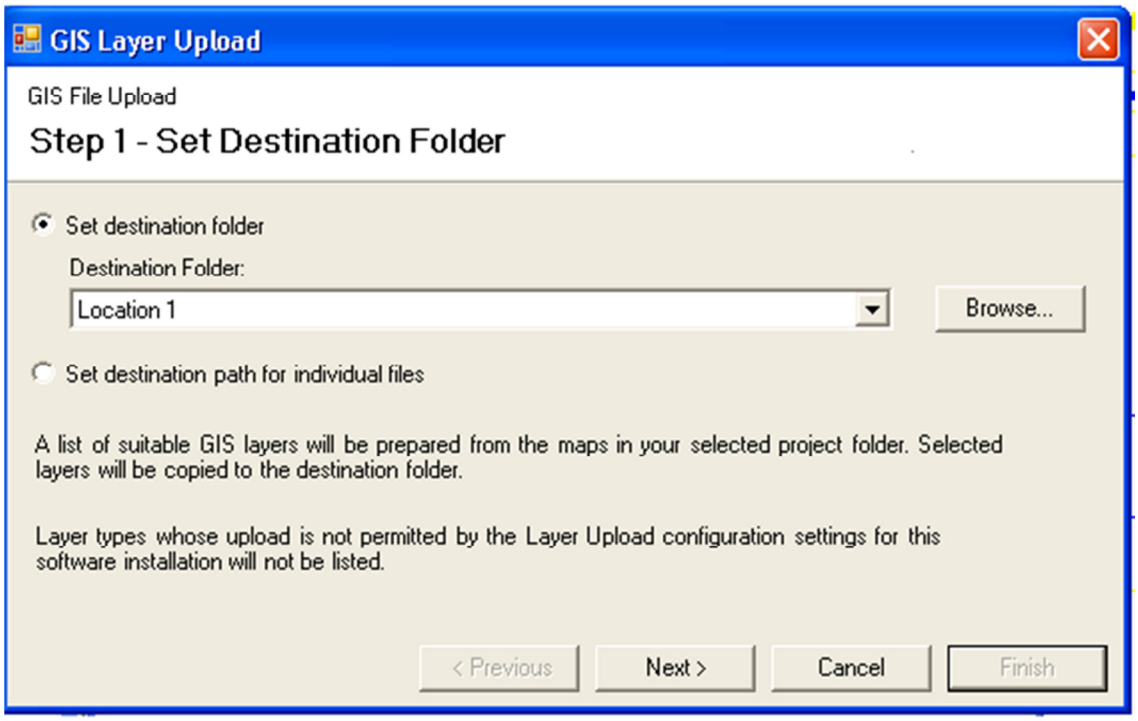
4.6.1 Operation

Firstly establish a network connection between the mobile computer and the central server.

Start *GBM Portable* and open a map. Then start the *GBM Data Manager* from the *Tools* menu.

The software will normally only provide options for uploading GIS files that are open in the current map.

In *GBM Data Manager*, click on the Standard Edition *Upload Data...* button to start the *GIS Layer Upload* utility.

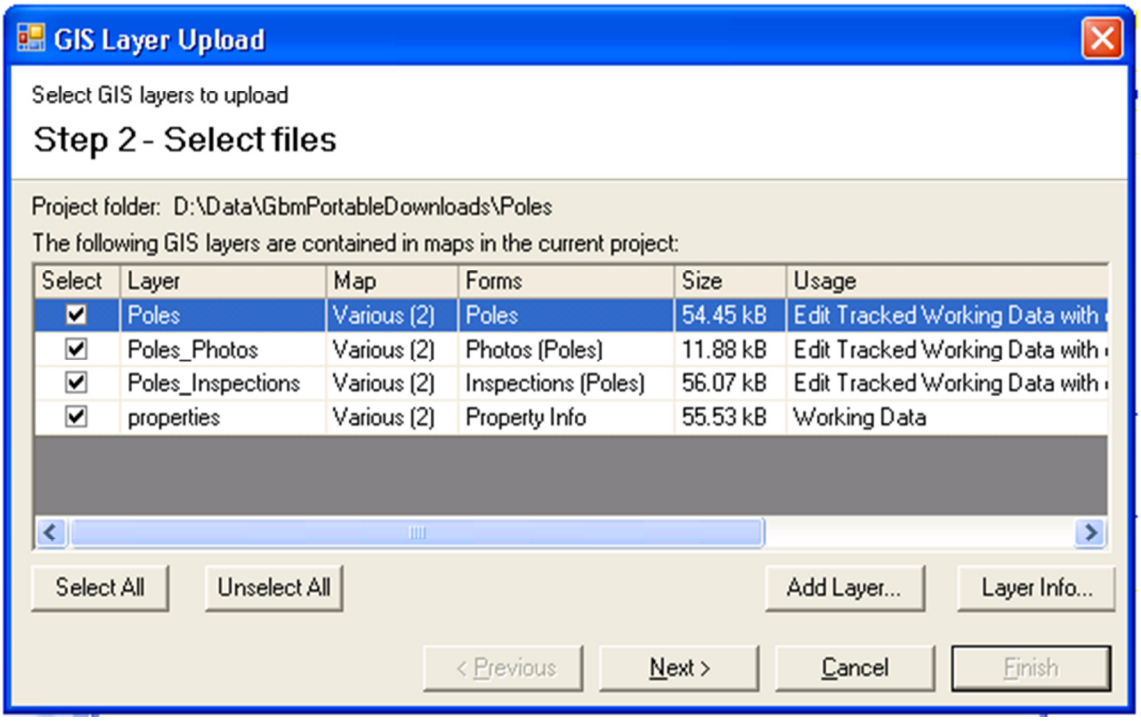

GIS Layer Upload
GIS File Upload
Step 1 - Set Destination Folder
Set destination folder
Destination Folder:
Location 1
Browse...
Set destination path for individual files
A list of suitable GIS layers will be prepared from the maps in your selected project folder. Selected layers will be copied to the destination folder.
Layer types whose upload is not permitted by the Layer Upload configuration settings for this software installation will not be listed.
< Previous
Next >
Cancel
Finish

Set the destination folder. This is the location where the software will create a folder hierarchy for storing GIS files on the central computer. It is the equivalent to the GBM Mobile Downloads folder.

Depending on settings in the file GBM.GISLayer.UploadConfig.xml (located in the *gbm.config* sub-folder of the software installation folder,) the user may or may not be able to browse for a new destination path. The GBM.GISLayer.UploadLocations.xml file contains one or more Destination Folder options in the drop down list.

Administrators my lock the destination path by editing the configuration files and denying end-uses edit rights to this file.

Click on the *Next* button to go to the *Step – 2 Select Files* wizard page.



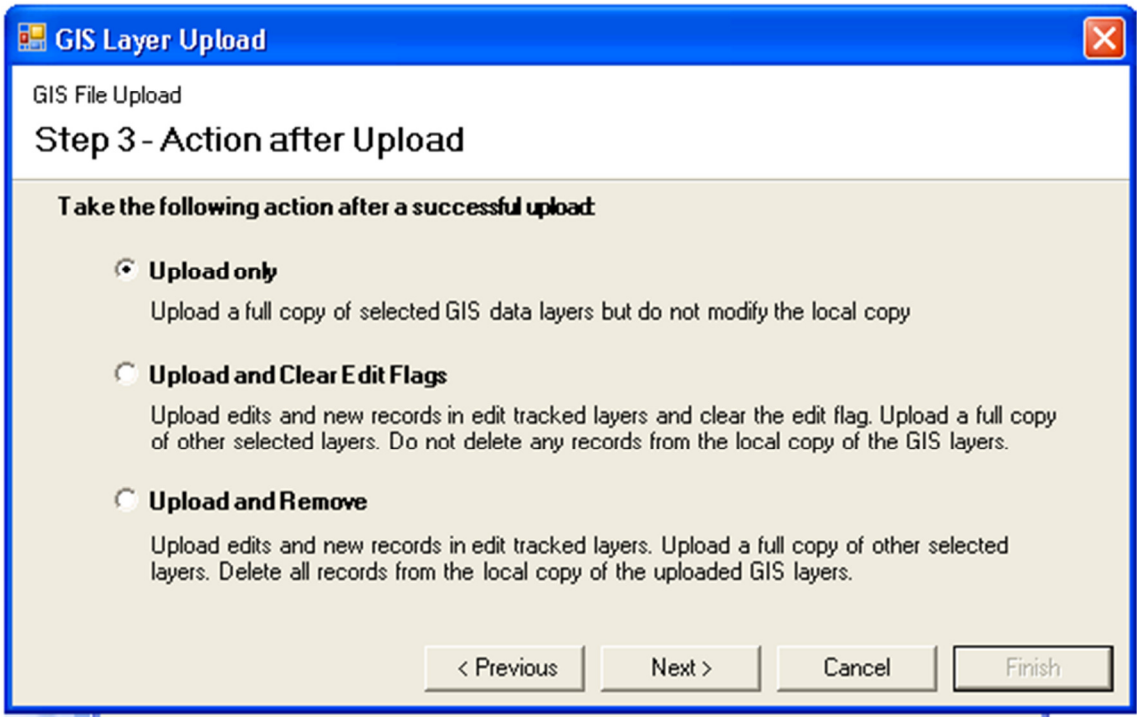
The software will now list the GIS files in the current map that are suitable for upload to the central file system. The GIS layers presented here will depend on settings in the configuration file GBM.GISLayer.UploadConfig.xml. By default, the GIS layers listed in the grid are the working data layers. GIS layers that are reference data, such as raster layers, are not listed in the grid by default.

Refer to the GBM Mobile user manual for definitions of working and reference data.

Note, however, that the GIS layers listed in the grid are not automatically uploaded. Only those layers in the grid that have a tick in the *Select* column are uploaded. By default, the layers that have a tick in the *Select* column are edit-tracked layers that contain edited records and working data layers that are not edit-tracked. Edit-tracked layers that have no edited records will not have a tick in the *Select* column.

The user can select and unselect for upload any of the GIS layers listed in the grid by clicking in the *Select* column or using the *Select All* or *Unselect All* buttons. Note also that additional GIS layers can be added to the grid for upload by using the A*dd Layer* button. When the *Add Layer* button is used, the new row in the grid automatically has the *Select* column ticked.

Click on the *Next* button to bring up the *Step 3 – Action after Upload* wizard page.

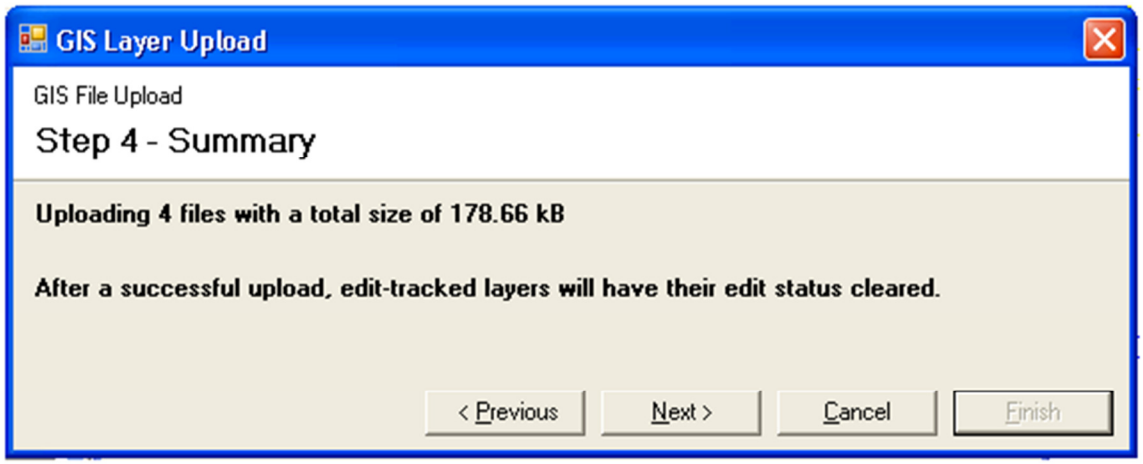

GIS Layer Upload
GIS File Upload
Step 3 - Action after Upload
Take the following action after a successful upload:
Upload only
Upload a full copy of selected GIS data layers but do not modify the local copy
Upload and Clear Edit Flags
Upload edits and new records in edit tracked layers and clear the edit flag. Upload a full copy of other selected layers. Do not delete any records from the local copy of the GIS layers.
Upload and Remove
Upload edits and new records in edit tracked layers. Upload a full copy of other selected layers. Delete all records from the local copy of the uploaded GIS layers.
< Previous
Next >
Cancel
Finish

This page lists the three possible actions that can be performed on a GIS layer on the local computer after a successful upload.

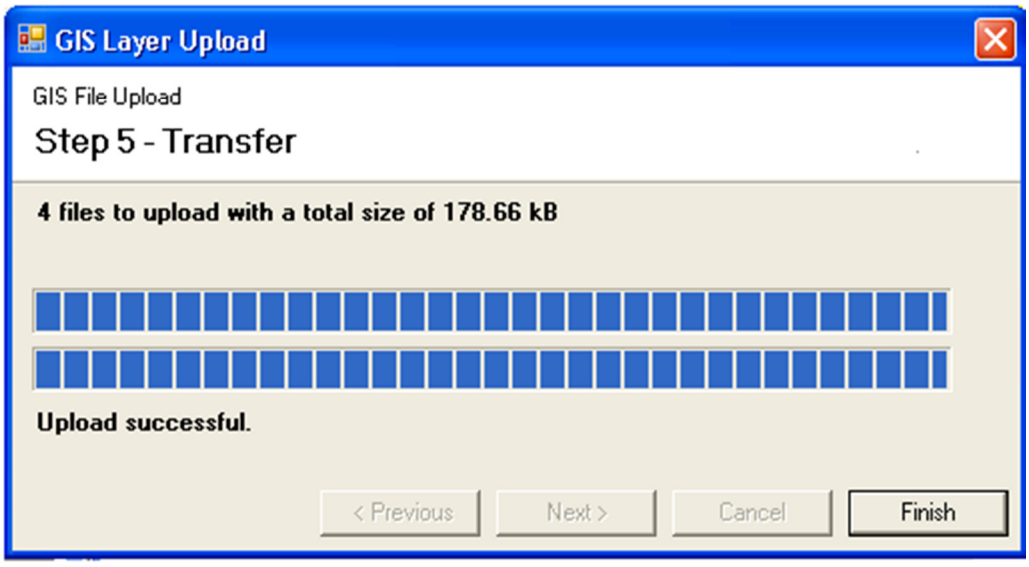
The *Upload only* option ensures that after a successful upload the edited records on the local machine are not modified, that is, they are not marked as having been uploaded. The second option, *Upload and Clear Edit Flags*, ensures that after a successful upload the edited records in the GIS layer on the local machine are marked as having been uploaded.

This means that they will not be uploaded the next time the user performs an upload (unless, of course, the records are edited again before the next upload.) Consequently, this option will probably be the one of most use to users. The third option, *Upload and Remove*, ensures that after a successful upload all the records in the GIS layer on the local machine, including records that have not been edited, will be deleted. Be very careful using this third option.

Select one of the options above and click on the *Next* button to bring up the *Step 4 – Summary* wizard page.


GIS Layer Upload
GIS File Upload
Step 4 - Summary
Uploading 4 files with a total size of 178.66 kB
After a successful upload, edit-tracked layers will have their edit status cleared.
< Previous
Next >
Cancel
Finish

The software will calculate the aggregate size of the files to be uploaded as a guide to likely data transfer times. The page lists the action that will be taken after a successful upload. Click on the *Next* button to continue and perform the actual upload.



The software will now provide summary information about the data that has been transferred. Files will have been loaded into a folder hierarchy that mirrors the structure established by the GBM Mobile Data Upload utility. These data are ready for GBM Autoloader or GBM Mobile Merge operation.

If there are several working data layers, and those layers are not all included in the same GIS map, it may be necessary to run the upload utility once for each map. Alternatively the GIS administrator may choose to define a special “upload” map that contains all the layers that need to be uploaded to the server at the end of each field session.

4.7 Data Services

GBM Data services transfers data between an office and mobile computer across and an internet or wireless connection.

The utility is most commonly used to update GIS layers on the remote computer and/or transfer a work package that includes both a data layer and associated custom forms.

Data services can also post incremental data updates to the office system when data on a remote computer is edited through Custom Forms. Linked photographs are automatically posted to the office computer with the changed data records.

Data Services can be configured to integrate directly with an in-house database or to work with the Global GBM post box on the cloud.

This is a separately priced utility. When installed it is bound into the Tools/Data Services menu item on the main GBM Portable menu bar.

More information can be found in the data services user guide.

5 Appendix I – Tool Buttons

Map tool buttons are presented at the top of the map window in the right hand panel. The button pad may change depending on which tabs is selected in the left hand panel.

5.1.1 Selection Tools

These tools are used to select and de-select map features. A number of general functions, including graphical editing (move feature) and map interrogation (statistics) operate on selected map features. It is also possible to select map features via the custom forms screens.

Select
Click on a map feature with the left hand mouse button. Use the combination of shift and click to add or remove features from the selection set.

Marquee select
Click on the map and drag. Features wholly within the rectangle will be selected.

Clear selection
Removes all features from the current selection set. Also clears temporary layers.

5.1.2 Map Navigation Tools

Map Navigation tools change the map area. The *map view* window in *Projects* mode can also be used to zoom and pan the map to the area described in pre-defined map views. Refer to the GBM Administration Console operating instructions in Appendix III for information on defining map views.

Pan
Click on the map and drag to move the map to display a different area.

Zoom in
Click on the map or click and drag to draw a rectangle. The map will zoom in to show more detail of the area within the rectangle.

Zoom out
Click on the map to show a larger map area

Home
Return to the original map view

5.1.3 Map Interrogation Tools

These tools display information on the map or on map features

Info Tool
Click on the map to view data attributes of map features under the click point. The information will be formatted according to the instructions in the *Info.xml* configuration file in the current project sub-folder. This file is maintained through the GBM Administration Console as explained in Appendix III.

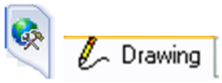
Data Attributes
Data attributes of features under the click point are presented in the Attributes screen in Custom Forms mode. When Custom Forms are available, the data layout of the attributes screen will reflect the form definitions. Default forms are auto-generated for map features that do not have a custom form loaded.

Measure
Click on the map to enter points, double click to finish. The distance will be shown in the statistics window in the map distance units set through the *Statistics Settings…* button at the bottom of the statistics screen.

5.1.4 Map Drawing Tools

The drawing tools are used to create new map features and to edit the geometry of existing features. They are only presented when relevant tabs are selected in the left hand panel.

When the drawing tab is selected in *Custom Forms* mode, drawing is controlled through the custom form definitions. Only custom form features can be created and they will be drawn on the map layer target by the form. They will be rendered with the graphical style defined in the form.



When the drawing tab is selected in *Tools* mode, the graphical style and target layer are set by the user. Drawing can be targeted at any map layer that is tagged as editable in the geoset of workspace file that the map was opened from.

Draw
Draw by clicking nodes on the map. Double click to terminate drawing of polylines or regions. It is also possible to draw custom forms features directly from the GPS. See the *Create from GPS* panel on the Custom Forms drawing tool.

Node edit
This tool is only enabled when a single editable map feature is selected (see selection tools above). Click on a node and drag to move that node. Select a node and press the delete key to remove that node.

Add node
This tool is only enabled when the node editing tool (above) is active. Click on a segment between two nodes of a polyline or region to add a new node at that location. The new node can then be moved through the node edit tool.

Select and move
When one of the drawing tabs is active, the standard select tool can be used to move the selected map features by dragging them across the map screen.

5.1.5 GPS Tools

Move to GPS location
This tool is only enabled when a GPS device is connected and operating. Click this button to move the selected map features to be centered at the location of the next received GPS fix.

Set GPS Waypoint
This tool is only presented with the GPS sub-tab is selected in Tools mode.

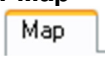
Select this tool and click on the map to set the current waypoint location. The waypoint will be marked with the graphical style specified through the *GPS settings…* button. The distance and bearing offset between the current GPS position and the waypoint will be updated on the GPS tab when a new location fix is received from the GPS.

6 Appendix II – Menu Items

The following menu items can be accessed through the menu bar at the top of the GBM Portable screen.

6.1.1 File Menu

New Map



This menu opens a new map window with no map layers present. Map layers can subsequently be added through the Open Table menu item (below) or the add layers (+ item) of the layer control tool.

For production implementations we recommend that maps be pre-defined though geoset (.gst) or workspace (.mws) files and opened through the map list on the project tab rather than through this menu item.

Open Table

This menu item is used to browse for a MapInfo .tab file and open it in a new map window.

For production implementations we recommend adding layers to pre-defined workspace files through the MapInfo MapXtreme Workspace Manger and opening those workspaces through the maps list on the project tab rather than through this menu item.

Open Geoset

Browses for a MapInfo MapX geoset (.gst file) and opens the map described in that file. This option is useful wither the map definition file is not in the project sub - folder and therefore does not present in the map list on the projects tab.

Open Workspace (*.mws file)

Browses for a MapXtreme workspace (.mws file) and opens the map described in that file. This option is useful wither the map definition file is not in the project sub - folder and therefore does not present in the map list on the projects tab.

Close All Maps

Closes all the map windows and associated MapInfo .tab files

Save Map

Saves the current map (layers list, Layer order, extents etc) to a MapInfo MapXtreme .mws file, overwriting the mws file the map was originally opened from.

Save Map As…

Saves details of the current map (layers list, layer order, extents etc) to a new MapInfo MapXtreme .mws file. It the .mws file is saved into the project sub-folder it will appear in the Map List on the Project tab.

Save Cosmetic Layer as

Creates a MapInfo .tab file containing all map features that have been draw into the cosmetic layer. The cosmetic layer is a temporary map layer that is added automatically whenever a new map is opened. Features drawn into the cosmetic layer are otherwise lost when the map is closed unless they are saved through this function.

Print map…

Inserts the current map view into a printing template and sends it to a windows printer. Users choose one of the pre-defined print template that have been loaded into the project sub-folder or the software installation folder.

Exit

Shuts down GBM Portable

6.1.2 Edit Menu

Copy Map

Copies the current map window to the windows paste buffer. Maps copied to the paste buffer can be inserted into other windows programs (such as Microsoft Word or PowerPoint) through the standard windows paste command within those programs. Most windows programs make the past command accessible through their Edit menu of from a right mouse click.

Clear Cosmetic Layer

Deletes all map features drawn into the temporary cosmetic layer. Use the *Save Cosmetic Layer as* menu command to retain these features in a permanent MapInfo .tab file if they will be required in a subsequent GBM Portable session.

6.1.3 Tools Menu

Set Project Folder…

Sets the path for the project folder. All sub-folders at this location will list as GBM Portable projects in *Projects* mode.

Mange Custom Forms Auto Numbers

Allows setting of unique numeric ranges to be used when assigning numbers through the custom forms auto number function. This function is only effective when the current project includes custom forms that use the auto-number feature. Refer to the GBM Mobile user manual for more information on auto numbering.

MapXtreme Workspace Manger

Opens the MapInfo MapXtreme Workspace Manager which can be used to create MapInfo MapXtreme map definitions and save them as .mws files. The workspace manage can also be used to edit existing MapInfo workspaces (.mws files).

This feature will only operate if it was selected at the time of software installation. Re-run the installation program or add this option if necessary.

GBM Administration Console

Starts the GBM Administration Console. The GBM Administration Console is used to edit configuration files to customize GBM Portable operation. Refer to Appendix III for information on working with the Administration Console.

GBM Data Manager

This is an optional extension to GBM Portable and is useful for installing GBM Portable Projects onto end-use computers. Contact Exa-Min or your GBM Portable reseller for more information on the Data Manager.

The feature will only operate if it was selected at the time of software installation. The GBM Data Manger is not included in all GBM Portable releases. Re-run the installation program or add this option if necessary.

GBM Data Manager is a collection of five utilities that provide for the copying of GBM Portable projects from a central server computer to a local computer via either a file system or the internet and the uploading of edited data from the local computer to the central server via a file system or the internet.

GBM Data Services

Starts the GBM Data Services utility to manage data transfer across the internet or wireless connection. . This is a separately priced option and may not be activated on your system. Refer to the separate Data Services documentation for details.

6.1.4 Help Menu

Contents

Opens this documentation in Windows Help

About GBM Portable

Presents a window showing developer contact details and version numbers for all currently installed components.

7 Appendix III – General Configuration

GBM Portable is soft tailored through a set of XML configuration files.

A number of these are systems files provided as part of the main installation and should not be changed by end-users. There are four sets of configuration files that may be adjusted by end user configuration consultants;

Map Tools Configuration

Included here are settings that control Find, Info and Projection options presented in Tools Mode and the map views that list in Project Mode. These configurations may be edited through the *GBM Administration Console* (see below).

Custom Forms

Custom forms present in Custom Forms Mode. They are edited through GBM Forms Editor. Refer to the GBM Mobile user manual for further information.

Map Legends

Map Legends are pre-prepared graphics files that may be associated with specific maps. These are defined in the Legends.xml file and may be manually edited by project administrators (see below)

Printing

In the standard release map printing is controlled through Microsoft Report Writer templates. Crystal Report templates are also supported. The list of available reports is managed through the file PrintingConfig.xml. Implementation consultants may edit this file manually should it be necessary. Details are provided below.

GBM Data Manager

GBM Data Manager runs from the tools menu and may be used to copy selected GIS files from the project folder to a central location. It is also to create GBM Portable profiles and download Portable projects from a central server to a local machin. Operation is controlled through configuration files that may be manually edited by project administrators (see below).

7.1 Map Tools Configuration (GBM Administration Console)

The GBM Administration Console is used to edit configuration files that tailor GBM Portable operation for specific data sets and user requirements. We strongly advise against hand editing these files.

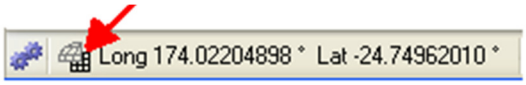
Files that can be edited through this tool include:

- ***Find.xml*** – configures the Find option that searches GIS attributes on the

sub-tab in info mode.
- ***Info.xml*** – configures the

tool to describe how to group and report attributes of map objects under the mouse click point.
- ***Locate_projections.xml*** – defines which map projections are available for selection through the *Locate Settings…* button on the

sub-tab.



This file also controls which projection options are offered in other parts of the application such as the map projections control at the bottom of the map.

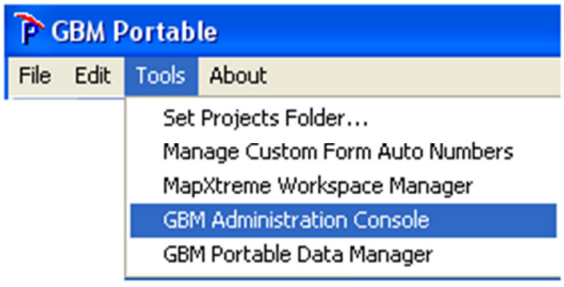
- ***Map_locations.xml*** – defines the map areas that are offered in

box on the project tab.

Within a GBM Portable session, program operation is controlled by the contents of the above files if they are found in the current project sub-folder. If any of the files are missing for a particular project, GBM Portable will read settings from a file of the same name in the program installation folder.

To find out which files control your current GBM Portable session, select the *Project Settings…* button.

Refer to section 4.3 of the main user manual for more information about using features configured through these files within the main GBM Portable application.



To start the GBM Administration Console select it from the Tools menu in GBM Portable. If the console is not available in your GBM Portable implementation you may need to re-install the software from the original installation media. Be sure to choose a *complete* installation or to check the Administration Console option in a *custom* install.

To configure the individual GBM Portable tools follow the instructions below.

7.1.1 Info Tool (info.xml)

This section is used to set-up the way the info tool operates in GBM Portable. The configuration file describes which map layers are accessed and how the attributes form map features in those layers are presented in the info panel.

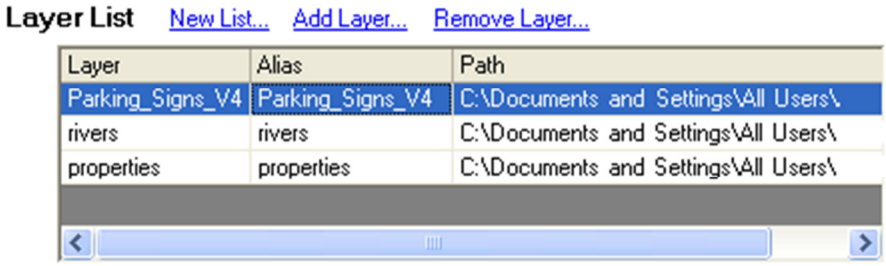
Configuring Info.xml

Select *Data Tools* from the left hand tab strip in the GBM Administration Console.

Data Tools

If there was a map open in GBM Portable when you launched the Administration Console, the top part of the screen will list the layers open in the current map. Subsequent xml file editing will be validated against this layers list and the data field included in the associated .tab files.

Adjust the layers list by adding or removing layers if required.

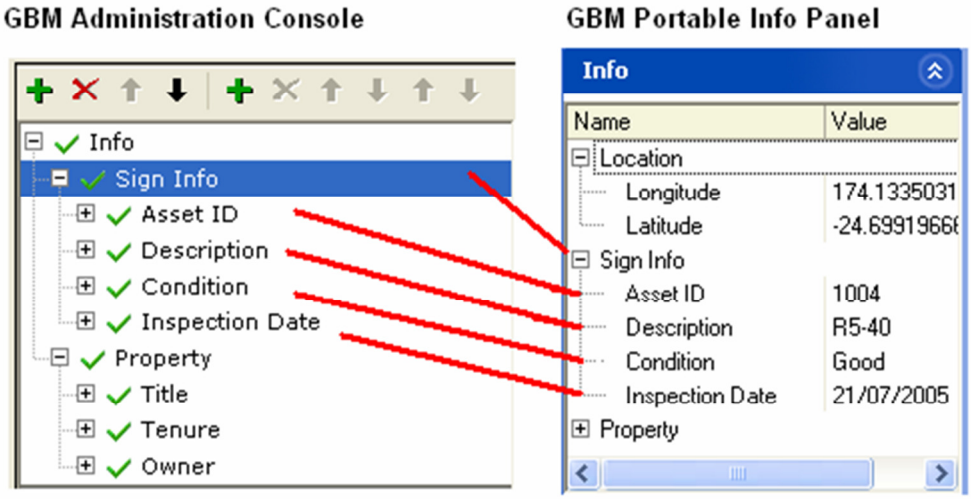


Choose Info Tool from the horizontal tab strip in the main body of the screen.

Click the "Open File" link to choose the location of the xml file to edit.

GBM Portable will use the file *info.xml* in the current project folder if that file exists. Only if there is no file named *Info.xml* in the current project sub-folder will GBM Portable fall back to using the default system file of the same name in the program installation folder.

The left hand panel will present a tree list of items that that will be displayed when the info tool is used with this configuration file.



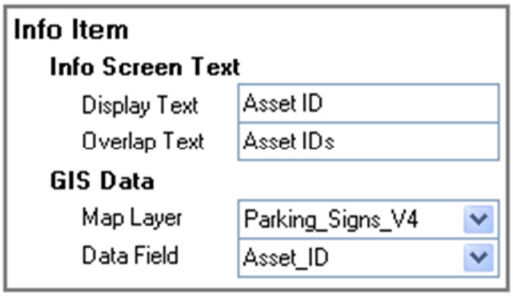
The hierarchy is one of *Info Groups* that contain *Info items.* The location group is always presented in the GBM Portable Info panel even though it is not expressly defined in the configuration file.

Each *Info item* presents a row of data in the GBM Portable info panel if a relevant map feature is below the click point when an operator clicks on a map with the Info tool.

As with Windows Explorer, clicking the "+" sign will expand a node in the tree display and clicking a "-" sign will collapse the display of details for that node.

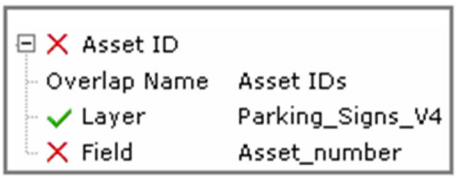
Select a node in the tree and use the tool buttons at the top of the tree list to add, remove or reorder nodes. You can also work with commands from the right mouse menu.

Click on an *Info Item* in the tree display to view and edit set-up details in the right hand panel.



Each *Info Item* presents the data values from one of the attribute field of a MapInfo .tab file for a map feature under the click point on the map. To configure an *Info Item*, choose the layer name from the top drop down list box and then choose a single data field from the list of attribute fields defined in the associated MapInfo .tab file.

Correct Entries



Inconsistent Values

Each item will be presented in the left hand panel with a green tick if the selected values are consistent with the MapInfo .tab files in the current layers list and with a red cross if the values are not consistent with the current layers list or the target layer is missing from the current list.

You may choose to type in values that are not offered in the drop down lists or to save a configuration file that contains *Info Items* that are marked with a red cross, if the layers that are open in your GBM Administration Console session are different from those that you expect to be available when end-uses operate the Info tool in GBM Portable.

For example, if a project has a number of maps that have different map layers, the Info tool may contain info items that relate to both maps. The GBM Portable Info tool will correctly present data from those layers that are present and will ignore other items.

When editing has been completed, click the *Save* link to save the file *info.xml.*

Test the configuration by clicking on a map in GBM Portable with the Info too.

If the tool does not operate as expected, check which *info.xml* file GBM Portable is currently accessing by clicking the *Project Settings…* button a the bottom of the GBM Portable *Project* tab.

7.1.2 Find Tool (find.xml)

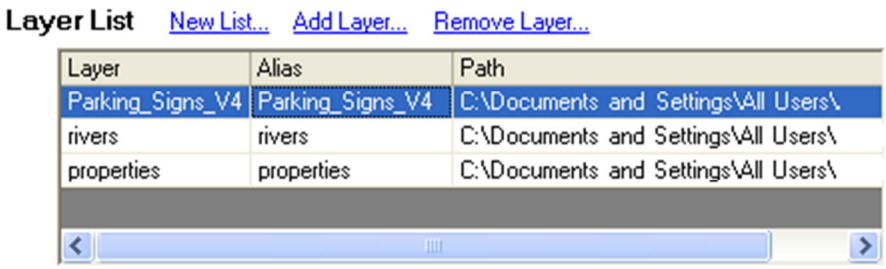
Find This section is used to set-up the way the find tool operates in GBM Portable. It is possible to set up data searches that allow GBM Portable operators to highlight the map position of features whose data attributes satisfy the search criteria.

Configuring Find.xml

Select *Data Tools* from the left hand tab strip in the GBM Administration Console.

Data Tools

If there was a map open in GBM Portable when you launched the Administration Console, the top part of the screen will list the layers open in the current map. Subsequent xml file editing will be validated against this layers list and the data field included in the associated .tab files.



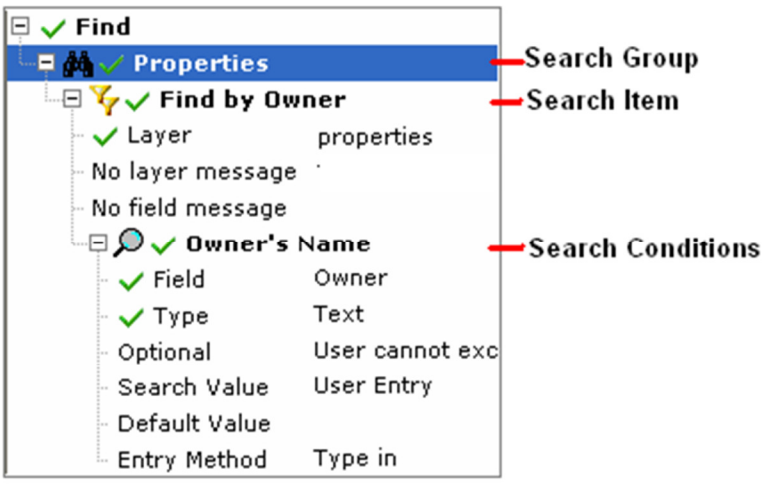
Adjust the layers list by adding or removing layers if required.

Find Tool Choose *Find Tool* from the horizontal tab strip in the main body of the screen.

Find File Open File... Click *Open file* and select a location for the file *Find.xml*

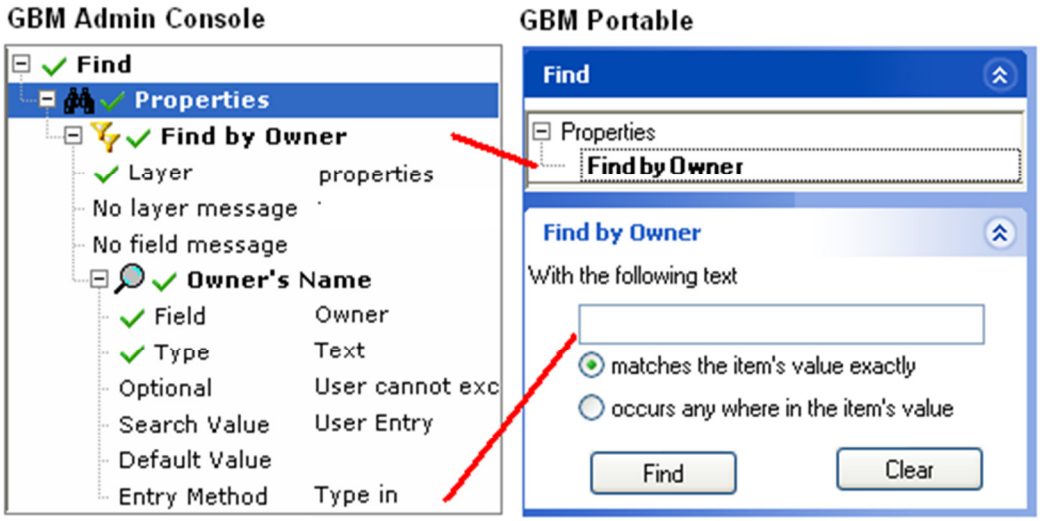
Current Project Files GBM Portable will use the file *find.xml* in the current project folder if the file exists in that location. Only if there is no file named *Find.xml* in the current project sub-folder will GBM Portable fall back to using the default system file in the program installation folder.

Once a configuration file has been opened, the left hand panel will present a tree list of data searches. The hierarchy shows *Search Groups*, each of which may include one or more *Data Searches*. Each Data Search targets as specific Map layer and may include one or more *Search Conditions* that consider the values in the various GIS attributes of features in the targeted GIS layer.



As with Windows Explorer, clicking the "+" sign will expand a node in the tree display. Clicking a "-"sign will collapse the display of details for that node.

Each search Item presents as a single search on the GBM Portable *Find* tab.



Click on an item in the tree display to view and edit set-up details in the right hand panel. Editing instructions are presented on the screen.

Select a node in the tree and use the tool buttons at the top of the tree list to add, remove or reorder nodes. You may also choose these commands from the from the right mouse menu.

As with Info tool configuration, each item will be presented in the left hand panel with a green tick if the selected values are consistent with the MapInfo .tab files in the current layers list and with a red cross if the values are not consistent with the current layers list or the target layer is missing from the current list.

You may choose to type in values that are not offered in the drop down lists or to save a configuration file that contains searches that are marked with a red cross, if the layers that are open in your GBM Administration Console session are different from those that you expect to be available when end-uses operate the Info tool in GBM Portable.

For example, if a project has a number of maps that have different map layers, different searches customized for each map. Info tool may contain info items that relate to both maps. The GBM Portable will list search options in red if the required layers are not open in the current map but will otherwise operate normally.

When editing has been completed, click the *Save* link to save the file *find.xml.*

Test the configuration by opening a map and GBM Portable and going to the Find tab. The list of search options will be presented in a list. Any searches that cannot be completed because the required GIS layers are not included in the current map will be marked in red.

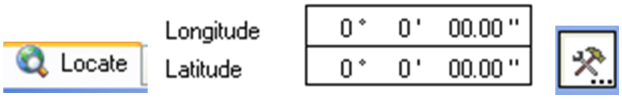
If the tool does not operate as expected, check which *Find.xml* file GBM Portable is currently accessing by clicking the *Project Settings…* button a the bottom of the GBM Portable *Project* tab.

7.1.3 Map Projections (locate_projections.xml)

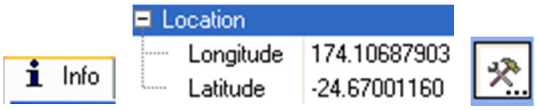
This section of the GBM Administration console is used to limit the list of map projections available to end-uses. It allows project administrator to provide end-uses with limited flexibility without confusing their choices with map project options that are not relevant to the local area or likely to cause confusion if used to communicate locations to co-workers.

GBM Portable allows users to select a map projection from the list of projections configured by this tool through the following GBM Portable controls.

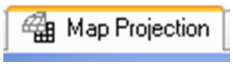
Set Cursor Projection – this control is located on the status bar at the bottom of GBM Portable map window. It allows end-uses to choose the projection and style in which the map co-ordinates are presented when the cursor is moved over the map.



The *locate* tool pans the map to the specified co-ordinates. The *Set Locate Projection* button allows the end-user to select the style of co-ordinate entry and choose the map projection those co-ordinates are described in. The list of available map projections will be limited to those described in locate_projections.xml.



The info tool (configure through the file info.xml described above) presents formatted information about map features at a click point on the map. The map location of the interrogation point is also listed each time the user clicks on the map with this tool. The configuration button on this tab allows end-users to specify the map projection used for this location reporting.



Maps are initially presented in the map projection defined in the geoset (.gst) or workspace (.mws) file that the map was opened from. This control allows end-uses to change the map projection to one of those listed in the current locate_projections.xml file

When using the above controls, end-users are restricted to selecting one of the map projections included in the current locate_projections.xml file or the projection of the current map (for the case where the map was opened from a workspace file with a projection is not listed in the locate_projections.xml file or the current map projection is set to that of a raster image layer).

Configuring locate_projections.xml

Select *Locate Projections* from the left hand tab strip in the GBM Administration Console.

Locate Projections

Click the Open file link to select the location for the locate_projections.xml file.

GBM Portable will use the file locate_projections.xml in the current project folder if that file exists. Only if there is no file of that name in the current project sub-folder will GBM Portable fall back to using the default system file in the program installation folder.

Administrators who are configuring corporate installations may choose to enter regional settings into one copy of locate_projections.xml and use that file to overwrite the default file in the program files folder.

One the locate_projections.xml file has been opened the panel will list the projections that have been added to that file.

These entries reference the projection parameters described in the MapInfo MapXtreme projections file (normally installed in Program Files\Common Files\MapInfo\MapXtreme …).

Use the controls at the bottom of the screen to add, remove and re-order the list of map projections.

Most commonly the operator will select the *Add Projection* link and navigate through the MapXtreme tree display to select a single projection. Click the + sign to expand a projection category to list the projection in that category.

Longitude / Latitude
Longitude / Latitude (v 6.0 and later
Non-Earth
Australian Map Grid (AGD 66)
Australian Map Grid (AGD 84)
Longitude / Latitude
Longitude / Latitude
Longitude / Latitude (Adindan)
Longitude / Latitude (Afgooye)
Longitude / Latitude (AGD 66)

Click on a single projection and choose OK to add it to the list.

It is also possible to add all projections within a single category by adding the entire category of projections.

Click Save to write the changes to the file locate_projections.xml.

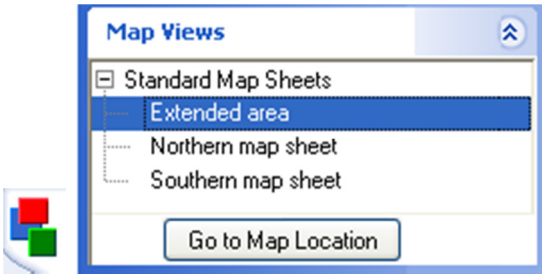
Test the changes by inspecting the projection list offered in GBM Portable. Be aware that the current map projection is automatically added to the list and that the initial map projection is set through the workspace or .gst file the map was originally opened from or the projection of the GIS file if a new map is created by opening a single MapInfo .tab file. Maps that contain raster images are normally locked into the projection of the raster image.

If the tool does not operate as expected, check which locate_projections.xml file GBM Portable is currently accessing by clicking the *Project Settings…* button a the bottom of the GBM Portable *Project* tab.

7.1.4 Map Views

Map views are pre defined map areas. They are described in terms of the coordinates of the center of the map (the map centroid) and the width of the map area in real world units.

Map views are stored in the file *map_locations.xml.* They are listed in the main Project panel.



End users click on a map view in GBM Portable to zoom and pan the map to the pre-defined location.

Configuring map_projections.xml

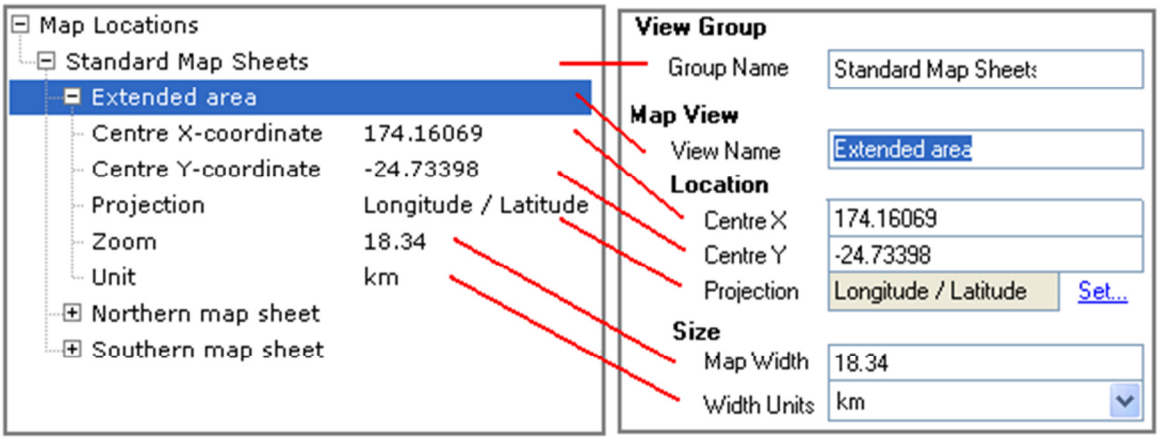
Select Map Views from the left hand tab strip in GBM Portable.

Map Views

Click the *Open file* link to select the location for the locate_projections.xml file.

Current Project Files GBM Portable will use the file *locate_projections.xml* in the current project folder if that file exists. Only if there is no file of that name in the current project sub-folder will GBM Portable fall back to using the default system file in the program installation folder.

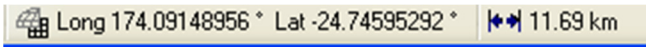
Once a file has been open, the list of map views defined in that file will be presented in the left hand panel.



Click on an item in the tree display to view and edit set-up details in the right hand panel. Editing instructions are presented on the screen.

Select a node in the tree and use the tool buttons at the top of the tree list to add, remove or reorder nodes, or select commands from the right mouse menu.

The easiest way to set up map views is to zoom and pan the map in GBM Portable until it displays the required map area. Then hold the cursor in the middle of the map and read the cursor location and map width from the status bar at the bottom of the map.



These are the values to edit into the *Centre X*, *Centre Y* and *Map Width* boxes in the GBM Admin Console to create a map view that will zoom and pan to this location.

Click Save to write the changes to the file locate_projections.xml.

Test the changes by viewing the list of map views that present on the project tab in GBM Portable.

If the list does not present as expected, check which *map_locationsxml* file GBM Portable is currently accessing by clicking the *Project Settings…* button a the bottom of the GBM Portable *Project* tab.

7.2 Custom Forms

Refer to Section 3.4 above for information on using custom forms. Set up forms using GBM Forms Editor. Refer to the GBM Mobile User Manual for further information. Refer to sections

1.7.3 and section 1.7.4 of the main user guide for information on setting up GBM Custom Forms for use in GBM Portable.

7.3 Map Legends

Map Legends may be associated with each map definition.

Building a Legend

First build the legend and save it as a graphics file. You may use any graphics programs for this. For example you may choose to build the legend in a GIS tool such as MapInfo Professional, export it in an image format such as .bmp or .jpg and further embellish with a graphics program such Microsoft Paint or Photoshop.

Standard Operation

If the graphics file has the same name as a as a map definition file, has a common graphics file extension and is located in the Legends sub folder of the project folder no configuration files are needed. For example, for a map called Map1.gst, GBM Portable will automatically activate a legend called Map1.gst.jpg if that file is placed in the legends sub-folder.

Advanced Configuration

The file Legends.xml may be used to associate any graphics file with a particular map, or perhaps associated the same graphics file to several maps. A default legend may be associated with all maps that do not have an explicit legend association.

An example legend file is shown below.

```
<?xml version="1.0" encoding="utf-8" ?>
<xml>
  <legend>
    <isDefault>true</isDefault>
    <image>Standard_legend.jpg</image>
  </legend>

  <legend>
    <image>Vegitation_Legend.jpg</image>
    <map>Weeds.mws</map>
  </legend>
</xml>
```

In this example, the default is set to true, so that all maps that are not explicitly referenced will be associated with the default graphics file called Standard_Legend.jpg.

The legend file Vegitation_Legend.jpg is linked to the map Weeds.mws.

7.4 Printing

In the standard release map printing is controlled through Microsoft Report Writer templates. Crystal Report templates are also supported.

The list of print templates available on your computer is read from the file *PrintingConfig.xml*. The master copy of this file and the actual print templates (.rdlc files) are normally loaded into the printing sub-folder of the GBM Portable programs file directory. If a file called *PrintingConfig.xml* is found in the current project sub-folder, that file is used in preference to the standard install file.

Implementation consultants may edit the configuration file manually should it be necessary.

Custom Configuation

PritingConfig.xml is a text file and can be edited with a standard text editor such as Microsoft Wordpad. Documentation is provided at the top of the file.

For each print template, the configuration file lists the template name, configuration details and the name of the report template file that describes the detailed page layout and the list of items to be prompted for at run time. Print templates are Microsoft report specifications and can be edited through Microsoft Visual Studio.

Contact Exa-Min or your local GBM Portable reseller to arrange a customized print layout if required. Print templates are commonly customized to include project specific legends, corporate logos and static text. They can be easily tailored to target custom page sizes or to prompt for additional title box text at run time.

7.5 GBM Data Manager

Refer to Section 4 for the configuration files that affect the five utilities that comprise GBM Data Manager.

GIS Layer Upload utility automates the transfer of the files associated with a GIS layer in an active GBM Portable project to a standard location or a location chosen by the operator. The transfer takes account of the various files (.tab, .map, .idx, .dat etc) that make up a map layer and transfer those to a unique folder on the server location.

The destination folders are correctly structured for subsequent processing through GBM Mobile Merge or GBM Autoloader.

GBM Data Manager is only available if selected at installation time. If necessary reinstall GBM Portable and select “complete” installation or choose GIS Update from the install options in a “custom” installation.

Custom Configuration

Operation of the *GIS Layer Upload* utility is controlled through configuration files that reside in the gbm.config sub-folder of the software installation folder. The location of the installation folder is displayed in the GBM Portable about box.

A list of optional upload destinations may be set in the file:

GBM.GISLayer.UploadLocations.xml

Types of files that users are permitted to upload are set in the file:

GBM.GISLayer.UploadConfig.xml

The files may be edited by a text editor by a user who has administration privileges to the software installation folder. Documentation is included in comment lines in the standard installation files.

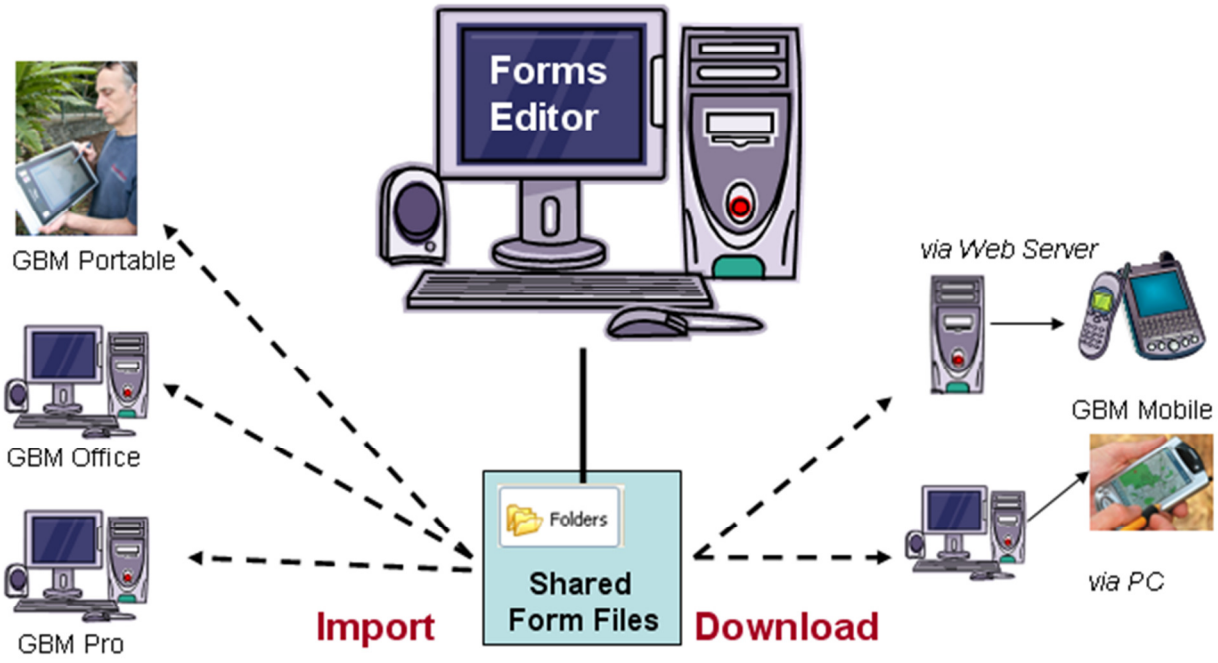
8 Appendix IV - Managing Custom Forms

This appendix provides a general introduction to GBM Custom Forms and explains how to import forms into a GBM Portable project.

More detailed information on form design is provided in the GBM Mobile user guide.

8.1 Shared Forms Files

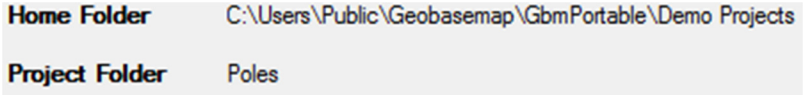
All GBM Software products (GBM Pro, GBM Mobile, GBM Portable and GBM Web) use the same GBM Custom Forms. Forms are maintained centrally through the Forms Editor and either downloaded onto a PDA for operation with GBM Mobile or imported into projects to be accessed by the other products.



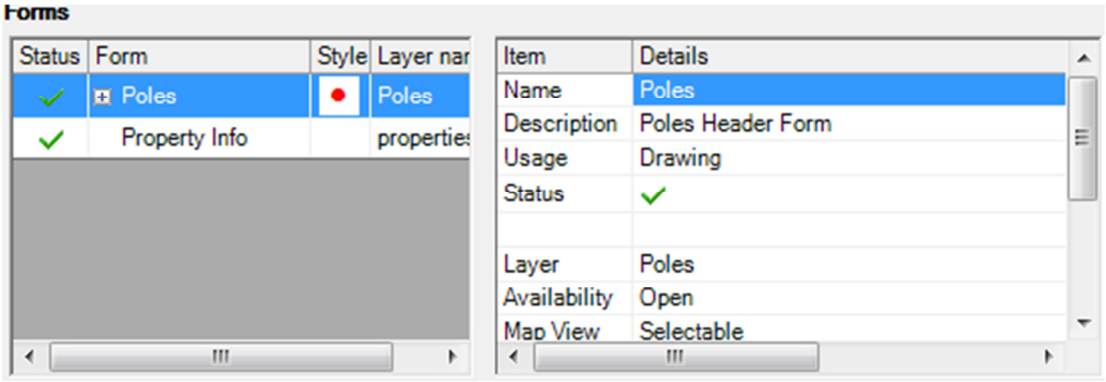
8.2 Managing Custom Forms

Access the forms manager through the Tools/Custom Forms…. menu item. Please open a project and display a map before activating this menu item.

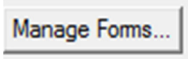
The screen will confirm the location of the home folder (the file system directory that contains the current project) and the name of the current project.



The lower part of the screen will list all custom forms currently in that project and the status of each form.



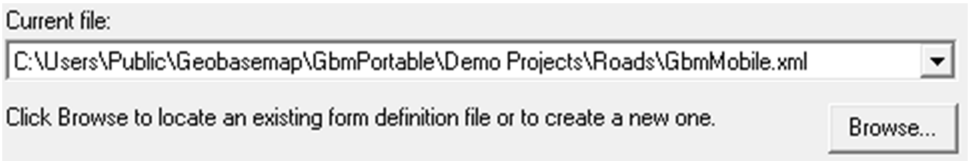
Use this screen to debug any issues with custom forms operation. Individual Custom Forms are only available (marked with a green tick) when they target a map layer that has been opened in the current map.



Click the manage forms link to access the forms editor. The screen is in four sections.

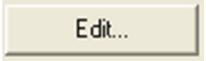
8.2.1 Shared Form File Location

The first section sets the location of the file that contains the master copy of the custom forms. This is the file that may be shared between GBM Mobile, GBM Portable, GBM Pro and GBM Web.


Current file:
C:\Users\Public\Geobasemap\GbmPortable\Demo Projects\Roads\GbmMobile.xml
Click Browse to locate an existing form definition file or to create a new one.
Browse...

Click browse to search for the shared form definition file. The location shown above is for one of the training data sets installed with the software.

8.2.2 Edit Custom Forms



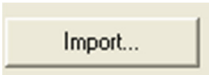
Click this button to open the Forms Editor. Instructions for building a basic custom form are provided in the GBM Mobile user guide.

8.2.3 Edit Form Relationships

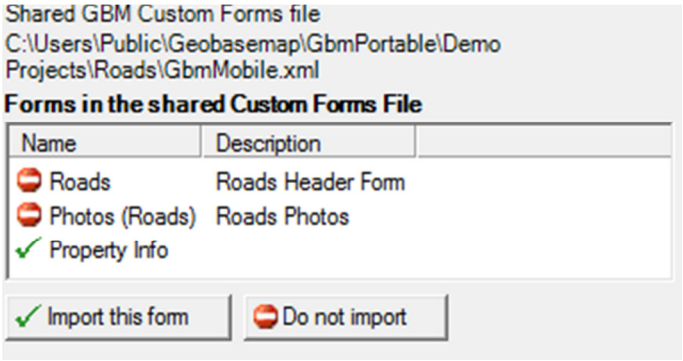
Click this button to link Custom Forms in one-to-many relationships. The individual forms need to be defined (through the forms editor) before they can be linked. Refer to the GBM Mobile user guide for details.

Form and relationship edits are not reflected in the current project until the updated forms have been re-imported into the project.

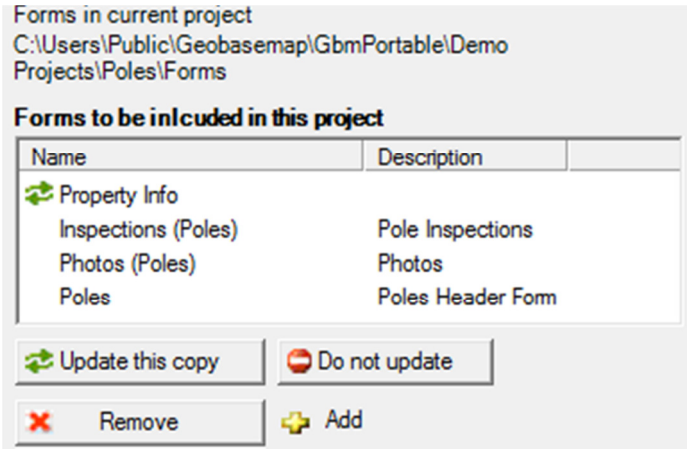
8.2.4 Import Forms



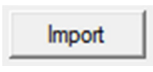
Click this button to access the import wizard.



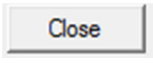
The left hand panel will list the forms in the current master file. GBM Portable will attempt to auto detect forms that are suited the current project/map configuration. Change the selection by selecting a form and clicking one of the buttons below the form list.



The right hand panel will show the location of the current GBM Portable project and list the forms that have already been imported into this project. If necessary, choose a form in the list and click one of the buttons at the bottom of the screen to define the required action.



Click Import to execute the chosen import/delete and update actions.



Click Close to exit without making further changes

Form and relationship edits are not reflected in the current project until the updated forms have been re-imported into the project. Select the target project before starting

the import process as forms are imported from the shared forms file into the project folder associated with the active project.

9 Appendix V - License Agreement

GBM Portable and all members of the GBM Mobility Suite are copyright product of Exa-Min Technologies Pty Ltd. The software may only be operated in accordance with the license conditions.

9.1 License Details

Exa-Min Software and Data End User Licence Agreement

Capitalised terms used in this Agreement have the meanings assigned to them in Section 12(j) or elsewhere in this Agreement. The terms "you" and "your" refer to the entity or person who purchased this licence. "Exa-Min" or "We" "us" and "our" refer to Exa-Min Technologies Pty Limited.

1. Licence Grant; Ownership. Subject to your compliance with the terms and conditions of this Agreement (including the payment of all required fees), Exa-Min grants you a limited, non-exclusive, non-transferable right and licence to install and use the Products in accordance with the terms of this Agreement. We are not selling the Products to you. Exa-Min and its third party providers retain title to and ownership of the Products and Documentation and training materials. Exa-Min and its third party providers reserve all rights not expressly granted to you under this Agreement.

2. Term; Termination.

a. Product Licences. The term of the licence we grant to you for the Products is perpetual unless we expressly specify otherwise in this Agreement, on the Order Form, or in a written amendment to this Agreement.

b. Maintenance and Update Subscriptions. Your obligation to pay for Maintenance and our obligation to provide them will commence as of the Effective Date and continue for the term specified in the Order Form.

c. Termination. If you breach the terms of this Agreement and fail to cure the breach within thirty (30) days after you receive our written notice of the breach, this Agreement (including all licences granted hereunder) will terminate. When a licence for any Product terminates, you must destroy the Product and all copies and, if we request, certify to us in writing that you have done so.

d. Limited Term Products. The term of the licence we grant you for certain Products may be limited and will be specified on the Order Form ("Limited Term Products"). When the licence for a Limited Term Product expires, you must (i) stop using the Limited Term Product and remove all copies of it and any Derived Data based on it from all computers and Servers on which it has been installed, (ii) destroy all copies of the Limited Term Product in your possession.

3. Use Rights.

a. Generally. You may use the Products solely for your internal business purposes in accordance with the terms in this Agreement as they apply to the particular licence type specified on the Order Form. The Section entitled "Product-Specific Terms" contains special use rights and restrictions for particular Products.

b. Named User Licences. You may install and use Products on individual Devices or on a Server, so long as the number of Named User Devices on which you install the Products or the number of Named User individuals permitted to access the Products from the central Server does not exceed the number of Named Users specified on the Order Form. For PDA based products each mobile device on which the software is installed counts as one named user. In the case or GBM Mobile, each named user license permits installation of GBM Mobile Manager for Windows on a single Windows workstation and GBM Mobile on a single Windows Mobile based Personal Digital Appliance (PDA).

c. CPU based Licences. You may install the Products on one or more Servers so long as the aggregate number of CPUs in all processors in those Servers does not exceed the number of CPUs specified on the Order Form.

4. Backup Copies/Installations. You may make one copy of the Products solely for backup purposes. You must maintain Exa-Min and third party licensor information, including copyright notices, on backup copies and keep the copies in a secure

location. If you have a Server Licence, you may install the Products on a backup Server to be used only when your main Server is inoperable and only so long as the number CPUs on the backup Server do not exceed what is licenced on the Order Form.

5. General Use Restrictions. You may not: (i) reverse engineer, decompile or disassemble the Products; (ii) make Derivative Works of the Software Products; (iii) make copies of the Products, except as permitted in Section 4; (iv) sublicence, rent, lease, lend or host the Products to or for other parties; (v) separate the components of Products or install and use such components separately and independently of the Products they comprise; (vi) use Products to translate a third party's products unless you have the legal right to do so; (vii) attempt to unlock or bypass any initialisation system, encryption methods or copy protection device we incorporate in the Products; (viii) alter, remove or obscure any patent, copyright or trademark notice contained in the Products; (ix) use the Products in a "concurrent use" or "floating licence" manner; or (x) use the Products in revenue-generating Internet-based services or applications for third parties or as an Application Service Provider.

7. Use and Restrictions: Data Products.

These data use restrictions apply only to data supplied as part of the product. This includes data supplied with the embedded MapInfo components and to Exa-Min data sets such as those provided for training and product demonstration. This agreement does not seek to restrict you from working with or distributing data acquired from other sources.

a. Data Use Rights. Subject to the restrictions in Section 7(b), you may use Data Products to produce Data Output for your internal business purposes and you may deliver the Data Output to third parties solely to market your products or services subject to the restrictions in Section 7(b) below. You must prohibit those third parties from selling, sublicensing or disclosing the Data Output to additional third parties and from using the Data Output for any purpose other than evaluating your products or services. You may use Data Products to derive conclusions or recommendations that form part of your services to third parties, but you may not provide Data Output or Data Products as part of those services. Notwithstanding Section 5, you may translate Data Products into other data formats so long as your use of the Data Products in all formats does not exceed the limits of this Agreement. Under this agreement data products include map data supplied as part of the MapInfo products, demonstration and training data sets and any other data that is supplied as part of the product or products licensed under this agreement.

b. Data Use Restrictions. You may not: (i) give third parties access to the Data Products or perform services for third parties using the Data Products on a Service Bureau basis; (ii) distribute or display to any third party the numerical cluster codes or the longitude and latitude or "x,y" coordinates contained in the Data Output; (iii) sell or provide Data Output to third parties as part of your products or services unless you and we agree in writing; (iv) have the Data Products reside or be stored in any Automatic Vehicle Location System; or (v) download to a desktop computer or client-side machine any Data Products or portions of Data Products that you have licensed from us on a Server Licence.

8. Updates; Maintenance; Technical Support; Services.

a. Software Maintenance. If you have purchased Maintenance and paid the annual Maintenance fees for particular software Products, Exa-Min will deliver updates and upgrades to those Products as they become commercially available. We do not guarantee that we will update or upgrade software Products on any particular schedule. Upon delivery, updates and upgrades will be considered "Products" for all purposes hereunder. Updates and upgrades replace Products that you initially licensed from us and that made you eligible for the update or upgrade.

d. Services. Exa-Min will provide basic services such as pre-installation preparation, on-site installation and post-installation review as set forth in the Order Form ("Services"). Enhanced customisation or software development services may also be provided by separate agreement. All services that relate to the licensed products are subject to the terms of this license agreement. All services are subject to Exa-Min standard terms and conditions for the provision of services. Exa-Min retains all right, title and interest in and to all intellectual property that it generates, conceives or develops as part of the Services, including, without limitation, inventions conceived or reduced to practice and any resulting patents, and any works of authorship in any form of expression including, without limitation, manuals and software ("Exa-Min Materials"). Your use of Exa-Min Materials is subject to all the restrictions applicable to Products. Any changes to the Services must be approved by both parties in writing and may involve an increase in cost or time estimated to complete Services

9. Warranties.

a. Limited Product Warranty. We warrant that the media containing the Products will be free from material defects for a period of ninety (90) days from the date we ship the Products to you. To the maximum extent permitted by law, any warranties that the law imposes will be similarly limited in scope and duration. This warranty does not apply if the defects result from accident or abuse by someone other than us. If you notify us during the warranty period that a Product does not satisfy this warranty, then we may elect to either return to you the initial price you paid for the licence, or repair or replace the Product. To the maximum extent permitted by law, this is your exclusive remedy for the failure of any Product to meet this warranty.

b. DISCLAIMER. WE DO NOT WARRANT THAT THE PRODUCTS WILL OPERATE ERROR-FREE OR THAT WE WILL CORRECT ALL PRODUCT ERRORS. TO THE EXTENT PERMITTED BY APPLICABLE LAW, WE DISCLAIM AND EXCLUDE ALL REPRESENTATIONS, WARRANTIES AND CONDITIONS WITH RESPECT TO PRODUCTS, WHETHER EXPRESS, IMPLIED OR STATUTORY, OTHER THAN THOSE EXPRESSLY IDENTIFIED IN THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF NON-INFRINGEMENT, TITLE, SATISFACTORY QUALITY, ACCURACY, RELIABILITY, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. OUR ENTIRE LIABILITY, AND YOUR ONLY REMEDY, FOR A BREACH OF A WARRANTY WILL BE EITHER CORRECTION OF THE PRODUCT ERROR THAT CAUSED THE BREACH, OR RETURN OF THE LICENCE FEES YOU PAID FOR THE PRODUCT OR SERVICES IF APPLICABLE.

10. Indemnification; Liability.

a. Indemnification. We will defend you against any claim by an unaffiliated third party that the Products infringe that party's patent, copyright or other intellectual property right issued and existing as of the Effective Date in a court of competent jurisdiction, provided that you promptly notify Exa-Min in writing of any such claim, give us reasonable cooperation, information, and assistance in connection with it, and consent to Exa-Min's sole control and authority with respect to the defense, settlement or compromise of the claim. We will not be obligated under this section if the infringement results from: (i) your use of a previous version of a Product and would have been avoided had you used the current version of the Product; (ii) your combining the Products with devices or products not provided by Exa-Min, (iii) use of the Products in applications, business environments or processes for which the Products were not designed or contemplated, and where use of the Products outside such application, environment or business process would not have given rise to the claim, (iv) corrections, modifications, alterations or enhancements that you make to the Product; (v) use of the Products by any person or entity other than you or your employees; or (vi) your willful infringement.

If we believe a Product may be or is subject to an infringement claim, or if a court of competent jurisdiction enjoins your use of a Product as a result of an infringement claim, we may, at our expense and our discretion: (a) procure for you the right to continue using the Product; (b) modify the Product to make it non-infringing; or (c) replace it with a functional non-infringing equivalent. If we believe that none of these options is reasonably available, then we may terminate the licence to the allegedly infringing Product and our sole liability will be to refund to you the licence fees you paid for such Products, prorated over a five (5) year period from the date of their delivery to you.

You will defend and indemnify Exa-Min and its third party licensors from any and all liabilities, damages, losses, expenses, demands, claims, suits or judgments, including reasonable attorneys' fees, costs and expenses arising from your unauthorised use of any Product. Neither Exa-Min nor its third party licensors will be responsible for any direct or indirect loss or damage that may result from such unauthorised use.

b. LIMITATION OF LIABILITY. SUBJECT TO SECTION 10(d), EXA-MIN AND ITS THIRD PARTY LICENSORS WILL NOT BE LIABLE IN ANY EVENT TO YOU OR ANY OTHER PERSON, REGARDLESS OF THE CAUSE, FOR: (I) THE EFFECTIVENESS OR ACCURACY OF THE PRODUCTS; (II) THE COST OF PROCURING REPLACEMENT GOODS OR SERVICES: (III) LOST PROFITS OR LOST SALES: OR (III) ANY SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY, MULTIPLE OR CONSEQUENTIAL DAMAGES; ARISING FROM OR OCCASIONED BY YOUR USE OF THE PRODUCTS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

c. **MAXIMUM LIABILITY**. SUBJECT TO SECTION 10(d), IN ANY EVENT, EXA-MIN'S MAXIMUM LIABILITY FOR ANY CLAIM ARISING IN CONNECTION WITH THE PRODUCTS WILL NOT EXCEED THE LICENCE FEES YOU HAVE PAID WITH RESPECT TO THE PRODUCTS AT ISSUE.

d. Nothing in this Agreement shall exclude or restrict either party's liability for: (i) death or personal injury resulting from the negligence of a party or its employees acting in the course of their employment; (ii) fraudulent misrepresentation; or (iii) any other cause of action which cannot be limited or excluded under applicable law.

e. APPLICABILITY OF DISCLAIMERS AND LIMITATIONS. You agree that Exa-Min has set its prices and entered into this Agreement in reliance upon the disclaimers and limitations in this section and that these disclaimers and limitations allocate risk between you and Exa-Min and are an essential part of the bargain between us.

11. Audit/Reporting. Upon five (5) business days written notice, we may audit your use of the Products at your place(s) of business during normal working hours. Additionally, within thirty (30) days after receiving our written request, you will give us a written certification, in a form that we provide and signed by an officer of your organisation that you are complying with this Agreement. Exa-Min will make no more than one audit and/or one certification request in any twelve (12) month period. If our audit or your certification reveals that your actual use of the Products exceeds your licensed use or is otherwise not compliant with this Agreement, you will purchase Product licences for your unlicensed use and, if the excess is greater than five per cent (5%), pay all our reasonable costs related to the audit.

12. Miscellaneous.

a. Entire Agreement; Amendment. This Agreement and the documents referred to in this Agreement, including the Order Form, constitute the entire and only agreement and understanding between the parties relating to the Products and supersedes all prior or contemporaneous agreements. The terms of this Agreement supersede the terms in any purchase order or other document you give us. This agreement may be modified only in a writing signed by you and Exa-Min.

b. **Governing Law**. The laws of the State of Queensland, Australia will govern this contract and any interpretation of it. Queensland, Australia's principles of conflicts of law and the U.N. Convention on Contracts for the International Sale of Goods will not apply. You agree to the exclusive jurisdiction of the Courts of Queensland and the Courts of Appeal from them for resolution of any dispute related to this Agreement.

c. **Waiver; Severability**. Either party's failure to enforce any provision of this Agreement will not constitute a waiver of the provision or of the party's right to enforce the provision. If any provision of this Agreement is held invalid or unenforceable, the remainder of the Agreement will not be affected or impaired in any way. If the provision in question would be valid or enforceable if modified, then the provision will apply with the modification necessary to make it valid and enforceable.

d. **Notices**. Any notices sent to a party to this Agreement must be in writing, addressed to the party at the address on the Order Form or any other address that the party specifies from time to time, and will be deemed given if delivered personally, via facsimile, regular mail, nationally-recognised overnight courier or by registered or certified mail. Notices will be deemed received in the case of personal delivery or facsimile on the date when delivered or faxed, in the case of overnight courier on the date delivered, and in the case of regular, registered or certified mail three (3) days after deposit with the postal service.

e. **Assignment**. You may not assign, sublicence or transfer your rights or delegate your obligations under this Agreement without our written consent. Any attempt by you to transfer this Agreement without our consent will be void, the transferee will acquire no rights whatsoever, and Exa-Min will not be required to recognise the transfer. This provision limits both the right and the power to transfer this Agreement and the rights hereunder.

f. **Force Majeure**. Exa-Min will not be deemed in default under this Agreement as a result of any delay in the performance of its obligations due to causes beyond its reasonable control.

g. Export. You agree not to export, re-export, or provide the Products to (i) any country to which the United States has embargoed goods; (ii) any person on the U.S. Treasury Department's list of Specially Designated Nationals; (iii) any person or entity on the U.S. Commerce Department's Denied Persons List; or (iv) any person or entity where such export, re-export or provision violates any U.S. Export control or regulation.

i. U.S. Government Restricted Rights. If you are an agency of the United States Government, you agree that Product(s) are "commercial computer software" or "commercial computer software documentation" and the Governments rights with respect to such software documentation are limited by the terms of this Licence Agreement, pursuant to FAR § 12.212(a) and/or DFARS § 227.7202-1(a), as applicable.

j. Definitions. "**Application Service Provider**" means an entity or person who hosts a computer application and provides third parties access to its functionality over the Internet or other network. "**Automatic Vehicle Location System**" means a vehicle-installed system containing one or more of the following: (i) a storage device to hold Data Products or portions thereof, (ii) a gyroscope, or (iii) a device to detect vehicle wheel rotation. "**CPU**" means a central processing unit in a computer regardless of its megahertz capacity. "**Data Products**" means those sets of compiled data that you licence from Exa-Min and that are listed on the Order Form. "**Data Output**" means the maps, reports or other information that you generate by analysing or processing Data Products, including geocode coordinates or cluster segmentation assignments appended to your database records. "**Data Updates**" means replacement or additions that we provide for Data Products. "**Derived Data**" means the result generated by combining, or performing mathematical calculations on, variables or fields of Data Products, extracting subsets of Data Products, and combining Data Products or portions of them with your data or third party data. "**Derivative Works**" means a work that is based upon, or that translates, recasts or adapts a Product. "**Device**" means a single personal computer, laptop, workstation, terminal, personal digital assistant, or other computing device. "**Documentation**" means the user documentation that accompanies the Products. "**Effective Date**" means the date when the parties entered into this Agreement. "**Maintenance**" means Exa-Min's delivery to you of updates or upgrades to Software Products as they become commercially available. "**Named User**" means a single named person or a Device. "**Order Form**" means the order form attached to this licence or other ordering documentation such as your purchase order. "**Power Unit**" means one megahertz of power in a CPU. "**Products**" means the Software Products or Data Products we licence to you under this Agreement. "**PSAP Products**" means Exa-Min PSAP Pro and PSAP Pro E-911. "**Server**" means a computer with one or more central processing units that provides services to other computers over a network. "**Server Licence**" means a Power Unit, CPU or SAU licence. "**Service Bureau**" means a data processing center performing processing, cleansing, analysis and other services on data for third parties. "**Single Application User"** or **"SAU"** means a single named person or Device authorised to access a single application. "**Software Products**" means the object code form of executable computer programs that Exa-Min licences to you under this Agreement.

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